

James Doss-Gollin

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PROFESSIONAL APPOINTMENTS

<i>Rice University</i>	Assistant Professor , Department of Civil and Environmental Engineering	<i>Starting</i> 2021
	Adjunct Professor , Department of Civil and Environmental Engineering	2020
<i>the Pennsylvania State University</i>	Postdoctoral Scholar , Keller Research Group, Earth and Environmental Systems Institute	2020

EDUCATION

<i>Columbia University</i>	Ph.D. , Earth and Environmental Engineering DISSERTATION "Sequential Adaptation through Prediction of Structured Climate Risk" COMMITTEE Upmanu Lall (advisor), Pierre Gentine (chair), Ngai Yin Yip, Casey Brown, Andrew R. Robertson	2020
	M.S. , Earth and Environmental Engineering	2016
<i>Yale University</i>	B.S. cum laude , Mechanical Engineering	2015

HONORS AND AWARDS

<i>Graduate Study</i>	Nickolas and Liliana Themelis Fellowship , Fu Foundation School of Engineering and Applied Science, Columbia University.	2018
	Graduate Research Fellowship , Climate and Large-Scale Atmospheric Dynamics, National Science Foundation.	2017
	Presidential Distinguished Fellowship , Fu Foundation School of Engineering and Applied Science, Columbia University.	2015
<i>Undergraduate Study</i>	Distinction in Major , Department of Mechanical Engineering and Materials Science, Yale University.	2015
	Legacy Award , New Haven Promise	2015
	Larry Coben '79 Fellowship , Yale University	2014
	Vance-Carter Travel Award , Yale University	2013
	Thomas C. Barry Travel Award , Yale University	2012

PUBLICATIONS

Journal Articles

- [1] **Doss-Gollin, James**, Farnham, David J., Ho, Michelle, and Lall, Upmanu. 2020b. "Adaptation over Fatalism: Leveraging High-Impact Climate Disasters to Boost Societal Resilience". *Journal of Water Resources Planning and Management* 146.4. doi: [10.1061/\(ASCE\)WR.1943-5452.0001190](https://doi.org/10.1061/(ASCE)WR.1943-5452.0001190).
- [2] **Doss-Gollin, James**, Farnham, David J., Steinschneider, Scott, and Lall, Upmanu. 2019b. "Robust Adaptation to Multiscale Climate Variability". *Earth's Future* 7.7. doi: [10.1029/2019EF001154](https://doi.org/10.1029/2019EF001154).
- [3] Rözer, Viktor, Kreibich, Heidi, Schröter, Kai, Müller, Meike, Sairam, Nivedita, **Doss-Gollin, James**, Lall, Upmanu, and Merz, Bruno. 2019d. "Probabilistic Models Significantly Reduce Uncertainty in Hurricane Harvey Pluvial Flood Loss Estimates". *Earth's Future* 7.4. doi: [10.1029/2018EF001074](https://doi.org/10.1029/2018EF001074).
- [4] **Doss-Gollin, James**, Muñoz, Ángel G, Mason, Simon J, and Pastén, Max. 2018b. "Heavy Rainfall in Paraguay during the 2015-2016 Austral Summer: Causes and Sub-Seasonal-to-Seasonal Predictive Skill". *Journal of Climate* 31.17. doi: [10.1175/JCLI-D-17-0805.1](https://doi.org/10.1175/JCLI-D-17-0805.1).
- [5] Farnham, David J, **Doss-Gollin, James**, and Lall, Upmanu. 2018c. "Regional Extreme Precipitation Events: Robust Inference from Credibly Simulated GCM Variables". *Water Resources Research* 54.6. doi: [10.1002/2017wr021318](https://doi.org/10.1002/2017wr021318).
- [6] **Doss-Gollin, James**, de Souza Filho, Francisco de Assis, and da Silva, Francisco Osny Enéas. 2015a. "Analytic Modeling of Rainwater Harvesting in the Brazilian Semi-arid Northeast". *Journal of the American Water Resources Association* 52.1. doi: [10.1111/1752-1688.12376](https://doi.org/10.1111/1752-1688.12376).

Dissertation

- [1] **Doss-Gollin, James**. 2020a. "Sequential Adaptation through Prediction of Structured Climate Risk". PhD thesis. Columbia University. doi: [10.7916/d8-p9ha-a055](https://doi.org/10.7916/d8-p9ha-a055).

Manuscripts Accepted, Under Review, and In Preparation

- [1] Amonkar, Yash Vijay, **Doss-Gollin, James**, and Lall, Upmanu. "Diagnosis, Simulation and Prediction of Inter-Annual and Longer Variations of Multi-Site, Annual Maximum Streamflow at a Regional Scale in the Ohio River Basin".
- [2] **Doss-Gollin, James**, Lall, Upmanu, and Cohn, Timothy A. "Nonparametric Estimation of Autocorrelation Functions and Spectra of Irregularly Sampled Data".
- [3] **Doss-Gollin, James**, Lall, Upmanu, and Lamontagne, Jonathan R. "Near-Term Predictability Can Lower Long-Term Adaptation Costs".

Conference Papers and Presentations

- [1] Amonkar, Yash Vijay, **Doss-Gollin, James**, and Lall, Upmanu. 2019a. "Preserving Long-Term Variability in Simulation of Multisite Streamflow Extremes". *American Geophysical Union Fall Meeting*. San Francisco, CA. doi: [10.6084/m9.figshare.11444238.v1](https://doi.org/10.6084/m9.figshare.11444238.v1).
- [2] **Doss-Gollin, James**, Lall, Upmanu, and Lamontagne, Jonathan. 2019c. "Towards Adaptive Resilience: Managing Uncertainties and Exploiting Predictability across Timescales". *American Geophysical Union Fall Meeting*. San Francisco, CA. doi: [10.6084/m9.figshare.11397936.v1](https://doi.org/10.6084/m9.figshare.11397936.v1).
- [3] **Doss-Gollin, James**, Farnham, David J, Steinschneider, Scott, and Lall, Upmanu. 2018a. "Robust Adaptation to Cyclical Climate Risk". *American Geophysical Union Fall Meeting*. Washington, DC. doi: [10.13140/RG.2.2.28447.20649](https://doi.org/10.13140/RG.2.2.28447.20649).

- [4] **Doss-Gollin, James**, Farnham, David J, and Lall, Upmanu. 2017a. "Designing and Operating Infrastructure for Nonstationary Flood Risk Management". *American Geophysical Union Fall Meeting*. New Orleans, LA. doi: [10.13140/RG.2.2.16110.46403](https://doi.org/10.13140/RG.2.2.16110.46403).
- [5] **Doss-Gollin, James**, Muñoz, Ángel G, Mason, Simon J, and Pastén, Max. 2017b. "Causes and Model Skill of the Persistent Intense Rainfall and Flooding in Paraguay during the Austral Summer 2015-2016". *American Geophysical Union Fall Meeting*. New Orleans, LA. doi: [10.13140/RG.2.2.20146.30406](https://doi.org/10.13140/RG.2.2.20146.30406).
- [6] Faranda, Davide, Messori, Gabriele, **Doss-Gollin, James**, Farnham, David J, Lall, Upmanu, and Yiou, Pascal. 2017c. "Dynamics and Thermodynamics of Weather Extremes: A Dynamical Systems Approach". *American Geophysical Union Fall Meeting*. New Orleans, LA.
- [7] Rözer, Viktor, Kreibich, Heidi, Schröter, Kai, **Doss-Gollin, James**, Lall, Upmanu, and Merz, Bruno. 2017d. "BN-FLEMOps Pluvial - A Probabilistic Multi-Variable Loss Estimation Model for Pluvial Floods". *American Geophysical Union Fall Meeting*. New Orleans, LA.
- [8] **Doss-Gollin, James**, Farnham, David J, and Lall, Upmanu. 2016a. "Global-Local Interactions Modulate Tropical Moisture Exports to the Ohio River Basin". *American Geophysical Union Fall Meeting*. San Francisco, CA. doi: [10.13140/RG.2.2.36009.19044](https://doi.org/10.13140/RG.2.2.36009.19044).
- [9] Farnham, David J, **Doss-Gollin, James**, and Lall, Upmanu. 2016b. "Space-Time Characteristics and Statistical Predictability of Extreme Daily Precipitation Events in the Ohio River Basin". *American Geophysical Union Fall Meeting*. San Francisco, CA.
- [10] Spence, Caitlin M, Brown, Casey, and **Doss-Gollin, James**. 2016c. "Exploiting Synoptic-Scale Climate Processes to Develop Nonstationary, Probabilistic Flood Hazard Projections". *American Geophysical Union Fall Meeting*.
- [11] Farnham, David J, Lall, Upmanu, Kwon, Hyun-Han, and **Doss-Gollin, James**. 2015b. "Moisture Transport and Extreme Precipitation in Mid-Latitudes". *American Geophysical Union Fall Meeting*. San Francisco, CA.
- [12] Araújo Júnior, Luiz Martins, de Souza Filho, Francisco de Assis, da Silva Silveira, Cleiton, Aragão Dias, Tyhago, and **Doss-Gollin, James**. 2014a. "Análise dos eventos de seca no Nordeste Setentrional Brasileiro vom case no índice de precipitação normalizada". *XII Simpósio de Recursos Hídricos Do Nordeste*. Natal, Rio Grande do Norte, Brasil: Associação Brasileira de Recursos Hídricos (ABRH). doi: [10.13140/RG.2.1.4610.7685](https://doi.org/10.13140/RG.2.1.4610.7685).
- [13] **Doss-Gollin, James**, de Souza Filho, Francisco de Assis, and da Silva, Francisco Osny Enéas. 2014b. "Considerações sobre a sustentabilidade hídrica de cisternas para captação de chuva no Semiárido Brasileiro". *XII Simpósio de Recursos Hídricos Do Nordeste*. Natal, Rio Grande do Norte, Brasil: Associação Brasileira de Recursos Hídricos (ABRH). doi: [10.13140/RG.2.1.4086.4807](https://doi.org/10.13140/RG.2.1.4086.4807).

TALKS AND PRESENTATIONS

<i>Invited Talks</i>	Towards Adaptive Resilience: Decision and Policy Support for Household Flood Risk Management , <i>Earth and Environmental Engineering Summer Seminar Series</i> , Columbia University.	2020-08-21
	Prediction and Implications of Structured Climate Risk for Sequential Adaptation under Deep Uncertainty , <i>Center for Climate Risk Management CLIMA Seminar</i> , the Pennsylvania State University, State College, PA.	2020-01-29
	Prediction and Implications of Structured Climate Risk for Sequential Adaptation under Deep Uncertainty , <i>Department of Civil and Environmental Engineering</i> , Rice University, Houston, TX.	2020-01-27
	Prediction and Implications of Structured Climate Risk for Sequential Adaptation under Deep Uncertainty , <i>Complex Systems Simulation and Optimization Group</i> , National Renewable Energy Laboratory, Golden, CO.	2020-01-07

Workshop Presentations	Drivers of Extreme Rainfall: Atmospheric Circulation Patterns and Regional Intense Rainfall in the Ohio River Basin , <i>European Flood Awareness System Group</i> , European Centre for Medium Range Weather Forecasting, Reading, England.	2016-09-02
	Understanding the Physical Drivers of Extreme Rainfall for Flood Prediction , <i>Oxford Water Network</i> , Oxford University, Oxford, England.	2016-08-26
	Adaptive Resilience through Real Options and Deep Reinforcement Learning , <i>Doctoral Consortium on Computational Sustainability</i> , Carnegie Mellon University, Pittsburgh, PA. Oral Presentation.	2019-10-18
	Evaluating Staged Investments in Critical Infrastructure for Climate Adaptation , <i>Interdisciplinary Ph.D. Workshop in Sustainable Development</i> , Columbia University, New York, NY. Oral Presentation.	2019-04-13
	Robust Adaptation to Multi-Scale Climate Variability , <i>The Nexus of Climate Data, Insurance, and Adaptive Capacity</i> , Asheville, NC. Poster Presentation.	2018-11-08
	Extreme Rainfall in Paraguay During the 2015-16 Austral Summer , <i>North East Graduate Student Water Symposium</i> , University of Massachusetts Amherst, Amherst, MA. Oral Presentation.	2017-09-10
	Regional Intense Precipitation: Inferences From GCM Atmospheric Circulation Fields , <i>Modeling Research in the Cloud</i> , NCAR, Boulder, Colorado. Poster Presentation.	2017-05-31
	Statistical-Dynamical Analysis of Climate Projections for Flood Infrastructure Design , <i>Interdisciplinary Ph.D. Workshop in Sustainable Development 2017</i> , Columbia University, New York, NY. Oral Presentation.	2017-04-21
	Physical Mechanisms and Subseasonal-to-Seasonal Predictability of Persistent Intense Rainfall and Paraguay River Flooding During the Austral Summer 2015/2016 , <i>Workshop on Subseasonal to Seasonal Predictability of Extreme Weather and Climate</i> , Columbia University, New York, NY. Poster Presentation.	2016-12-07

PUBLIC OUTREACH

Media Coverage	The False Comfort of Higher Seawalls , <i>Paola Rosa-Aquino</i> , The New Republic	2019-10-29
	Panelist , <i>Liquid Futures: Envisioning a World with Water for All</i> , Lenfest Center for the Arts, Columbia University, New York, NY.	2019-09-21
	New Study Shows Promise for Long-Term Weather Forecasts in South America , <i>Elisabeth Gawthrop</i> , State of the Planet.	2018-08-06

PROFESSIONAL ENGAGEMENT

- Peer Review* A verified review is available [on Publons](#):
- Hydrology and Earth System Sciences
 - Journal of Applied Meteorology and Climatology
 - Journal of Hydrology
 - Journal of Water Resources Management and Planning
 - Oxford Journal of Development Studies
 - Water Resources Research
 - Water Security

<i>Workshops and Sessions Organized</i>	Primary Convenor , <i>51A: Emerging Needs and Approaches for Climate Services: Understanding and Developing Innovative Approaches to User-Oriented Climate Services</i> , American Geophysical Union Fall Meeting, San Francisco, CA.	2019-12-23
	Student Organizer , <i>Earth and Environmental Engineering Student Research Symposium</i> , Columbia University, New York, NY.	2018-10-12
	Student Organizer , <i>Earth and Environmental Engineering Student Research Symposium</i> , Columbia University, New York, NY.	2017-10-27

TEACHING

<i>Columbia University</i>	Teaching Assistant , <i>Environmental Data Modeling and Analysis</i> , Dr. Upmanu Lall.	2017
	Guest Lecturer , <i>Water Systems Analysis</i> , Dr. Laureline Josset.	2017
<i>Non-Academic</i>	Python and Data Science Facilitator , <i>Oliver Wyman Group</i>	

FURTHER EXPERIENCE

<i>Graduate Study</i>	Visiting Graduate Researcher , <i>Lamontagne Research Group</i> , Department of Civil and Environmental Engineering, Tufts University, Medford, MA.	2019–2020
	Graduate Research Fellow , <i>Columbia Water Center</i> , Department of Earth and Environmental Engineering, Columbia University, New York, NY.	2015–2020
	Summer Intern , <i>Education Policy Initiative</i> , Elm City Communities / New Haven Housing Authority, New Haven, CT.	2015
<i>Undergraduate Study</i>	President (2014), Design Lead (2013), Member (2012, 2015), <i>Engineers Without Borders</i> , Yale Student Chapter, New Haven, CT.	2012 – 2015
	Founder and President , <i>New Haven REACH</i> , New Haven, CT.	2012–2015
	Visiting Undergraduate Researcher , <i>Water and Climate Risk Lab</i> , Department of Hydraulic and Environmental Engineering, Universidade Federal do Ceará, Fortaleza, Brazil.	2014
	Undergraduate Research Assistant , <i>Lab of Jaehong Kim</i> , Department of Chemical and Environmental Engineering, Yale University, New Haven, CT.	2014–2015
	Mechanical Design Intern , <i>Slingshot Team</i> , DEKA Research & Development, Manchester, NH.	2012

Undergraduate Research Assistant, *Lab of Jan Schroers*, Department of Mechanical Engineering and Materials Science, Yale University, New Haven, CT.
Summer Intern, *Ikatú Agua Project*, Fundación Paraguaya, Asunción, Paraguay

2012

2012

OTHER SKILLS

Computer Skills LANGUAGES · Python, R Julia, Matlab, C++
 COMMUNICATION · \LaTeX , Markdown, Jupyter, RMarkdown, Jekyll
 REPRODUCIBILITY · git, Snakemake, GNU Make
 MODELING · stan, PyMC, Keras, Tensorflow

Languages ENGLISH · Native language
 SPANISH · Full professional proficiency
 PORTUGUESE · Professional working proficiency
 ITALIAN · Elementary proficiency
 FRENCH · Elementary proficiency
 GUARANI · Basic