

James Doss-Gollin

✉ jdossgollin@psu.edu

🏠 jdossgollin.github.io

🆔 0000-0002-3428-2224

🐙 [jdossgollin](#)

🐦 [jdossgollin](#)

PROFESSIONAL APPOINTMENTS

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

EDUCATION

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

HONORS AND AWARDS

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

PUBLICATIONS

<i>Journal Publications</i>	Doss-Gollin, James , Farnham, David J., Ho, Michelle, and Lall, Upmanu. "Adaptation over Fatalism: Leveraging High-Impact Climate Disasters to Boost Societal Resilience". <i>Journal of Water Resources Planning and Management</i> 146.4. DOI: 10.1061/(ASCE)WR.1943-5452.0001190	<i>2020</i>
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	Rözer, Viktor, Kreibich, Heidi, Schröter, Kai, Müller, Meike, Sairam, Nivedita, Doss-Gollin, James , Lall, Upmanu, and Merz, Bruno. "Probabilistic Models Significantly Reduce Uncertainty in Hurricane Harvey Pluvial Flood Loss Estimates". <i>Earth's Future</i> 7.4. doi: 10.1029/2018EF001074	2019
	Doss-Gollin, James , Farnham, David J., Steinschneider, Scott, and Lall, Upmanu. "Robust Adaptation to Multiscale Climate Variability". <i>Earth's Future</i> 7.7. doi: 10.1029/2019EF001154	2019
	Farnham, David J, Doss-Gollin, James , and Lall, Upmanu. "Regional Extreme Precipitation Events: Robust Inference from Credibly Simulated GCM Variables". <i>Water Resources Research</i> 54.6. doi: 10.1002/2017wr021318	2018
	Doss-Gollin, James , Muñoz, Ángel G, Mason, Simon J, and Pastén, Max. "Heavy Rainfall in Paraguay during the 2015-2016 Austral Summer: Causes and Sub-Seasonal-to-Seasonal Predictive Skill". <i>Journal of Climate</i> 31.17. doi: 10.1175/JCLI-D-17-0805.1	2018
Dissertation	Doss-Gollin, James . "Sequential Adaptation through Prediction of Structured Climate Risk". PhD thesis. Columbia University. doi: 10.7916/d8-p9ha-a055	2020
Conference	Amonkar, Yash Vijay, Doss-Gollin, James , and Lall, Upmanu. "Preserving Long-Term Variability in Simulation of Multisite Streamflow Extremes". <i>American Geophysical Union Fall Meeting</i> . San Francisco, CA. doi: 10.6084/m9.figshare.11444238.v1	2019
	Doss-Gollin, James , Lall, Upmanu, and Lamontagne, Jonathan. "Towards Adaptive Resilience: Managing Uncertainties and Exploiting Predictability across Timescales". <i>American Geophysical Union Fall Meeting</i> . San Francisco, CA. doi: 10.6084/m9.figshare.11397936.v1	2019
	Doss-Gollin, James , Farnham, David J, Steinschneider, Scott, and Lall, Upmanu. "Robust Adaptation to Cyclical Climate Risk". <i>American Geophysical Union Fall Meeting</i> . Washington, DC. doi: 10.13140/RG.2.2.28447.20649	2018
	Doss-Gollin, James , Muñoz, Ángel G, Mason, Simon J, and Pastén, Max. "Causes and Model Skill of the Persistent Intense Rainfall and Flooding in Paraguay during the Austral Summer 2015-2016". <i>American Geophysical Union Fall Meeting</i> . New Orleans, LA. doi: 10.13140/RG.2.2.20146.30406	2017
	Doss-Gollin, James , Farnham, David J, and Lall, Upmanu. "Designing and Operating Infrastructure for Nonstationary Flood Risk Management". <i>American Geophysical Union Fall Meeting</i> . New Orleans, LA. doi: 10.13140/RG.2.2.16110.46403	2017
	Faranda, Davide, Messori, Gabriele, Doss-Gollin, James , Farnham, David J, Lall, Upmanu, and Yiou, Pascal. "Dynamics and Thermodynamics of Weather Extremes: A Dynamical Systems Approach". <i>American Geophysical Union Fall Meeting</i> . New Orleans, LA	2017
	Rözer, Viktor, Kreibich, Heidi, Schröter, Kai, Doss-Gollin, James , Lall, Upmanu, and Merz, Bruno. "BN-FLEMOps Pluvial - A Probabilistic Multi-Variable Loss Estimation Model for Pluvial Floods". <i>American Geophysical Union Fall Meeting</i> . New Orleans, LA	2017
	Doss-Gollin, James , Farnham, David J, and Lall, Upmanu. "Global-Local Interactions Modulate Tropical Moisture Exports to the Ohio River Basin". <i>American Geophysical Union Fall Meeting</i> . San Francisco, CA. doi: 10.13140/RG.2.2.36009.19044	2016

	Farnham, David J, Doss-Gollin, James , and Lall, Upmanu. "Space-Time Characteristics and Statistical Predictability of Extreme Daily Precipitation Events in the Ohio River Basin". <i>American Geophysical Union Fall Meeting</i> . San Francisco, CA	2016
	Spence, Caitlin M, Brown, Casey, and Doss-Gollin, James . "Exploiting Synoptic-Scale Climate Processes to Develop Nonstationary, Probabilistic Flood Hazard Projections". <i>American Geophysical Union Fall Meeting</i>	2016
	Doss-Gollin, James , de Souza Filho, Francisco de Assis, and da Silva, Francisco Osny Enéas. "Analytic Modeling of Rainwater Harvesting in the Brazilian Semiarid Northeast". <i>Journal of the American Water Resources Association</i> 52.1. DOI: 10.1111/1752-1688.12376	2015
	Farnham, David J, Lall, Upmanu, Kwon, Hyun-Han, and Doss-Gollin, James . "Moisture Transport and Extreme Precipitation in Mid-Latitudes". <i>American Geophysical Union Fall Meeting</i> . San Francisco, CA	2015
	Araújo Júnior, Luiz Martins, de Souza Filho, Francisco de Assis, da Silva Silveira, Cleiton, Aragão Dias, Tyhago, and Doss-Gollin, James . "Análise dos eventos de seca no Nordeste Setentrional Brasileiro com base no índice de precipitação normalizada". <i>XII Simpósio de Recursos Hídricos Do Nordeste</i> . Natal, Rio Grande do Norte, Brasil: Associação Brasileira de Recursos Hídricos (ABRH). DOI: 10.13140/RG.2.1.4610.7685	2014
	Doss-Gollin, James , de Souza Filho, Francisco de Assis, and da Silva, Francisco Osny Enéas. "Considerações sobre a sustentabilidade hídrica de cisternas para captação de chuva no Semiárido Brasileiro". <i>XII Simpósio de Recursos Hídricos Do Nordeste</i> . Natal, Rio Grande do Norte, Brasil: Associação Brasileira de Recursos Hídricos (ABRH). DOI: 10.13140/RG.2.1.4086.4807	2014
In Preparation	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"	
	Doss-Gollin, James , Lall, Upmanu, and Lamontagne, Jonathan R. "Near-Term Predictability Can Lower Long-Term Adaptation Costs"	
	Doss-Gollin, James , Lall, Upmanu, and Cohn, Timothy A. "Nonparametric Estimation of Autocorrelation Functions and Spectra of Irregularly Sampled Data"	

TALKS AND PRESENTATIONS

Invited Talks	Towards Adaptive Resilience: Decision and Policy Support for Household Flood Risk Management , <i>Department of Earth and Environmental Engineering Summer Seminar</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

	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
Workshop Presentations	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 , Paola Rosa-Aquino, 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 , Elisabeth Gawthrop, State of the Planet.	2018-08-06

PROFESSIONAL ENGAGEMENT

Peer Review	A verified review is available on Publons:	
	<ul style="list-style-type: none"> • 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 	

Workshops and Sessions Organized	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

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

FURTHER EXPERIENCE

Graduate Study	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
Undergraduate Study	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 , <i>Lab of Jan Schroers</i> , Department of Mechanical Engineering and Materials Science, Yale University, New Haven, CT.	2012
	Summer Intern , <i>Ikatú Agua Project</i> , Fundación Paraguaya, Asunción, Paraguay	2012

OTHER SKILLS

Computer Skills	LANGUAGES	Python, R Julia, Matlab, C++
	COMMUNICATION	L ^A T _E X, 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