

MIRIAM NIELSEN

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Education

- 2025 **Ph.D, Earth & Environmental Sciences, NASA Goddard Institute For Space Studies & Columbia University.**
Dissertation: Interactions between soil moisture and precipitation in a changing world
Advisors: Kate Marvel & Benjamin Cook
- 2024 **M.Phil, Earth & Environmental Sciences, Columbia University.**
- 2022 **M.A, Earth & Environmental Sciences, Columbia University.**
- 2018 **M.A, Climate & Society, Earth & Environmental Sciences, Columbia University.**
- 2014 **B.A, Environmental Science and Creative Arts, Middlebury College.**
minors: Computer Science, Chinese

Research Experience & Appointments

Lamont Doherty Earth Observatory

- 2025-Present **Postdoctoral Research Scientist**, Research in collaboration with Dr. Chia-Ying Lee investigating the physical processes through which the common equatorial Pacific cold tongue biases in GCMs influence the models' projections of mean-state climate and global tropical cyclone activity, as well as to quantify this influence and characterize the associated uncertainty..

NASA Goddard Institute for Space Studies

- 2020-2025 **Graduate Research Assistant**, Investigating the shifting relationships between precipitation and soil moisture drought in a warming world.

Red Cross Red Crescent Climate Centre

- 2020 **Science Consultant**, Prepared an impact-based forecasting methodology for use by National Hydro-Meteorological Services with technical guidance on early action for disasters.

UNICEF

- 2020 **Data Analyst**, Developed a near-global monthly calendar of country-level seasonal events and hazards for all countries where UNICEF has an operational presence (approximately 150 countries).

International Research Institute for Climate & Society (IRI)

- 2019 **Research Associate**, Systematic review of flash flood and related hazard vulnerability. Developed a database of flash flood events and risk response. The project is aligned with NASA and the Group on Earth Observations (GEO) 2017-2019 work program for the Initiative for Global Flood Risk Monitoring.

NASA Disasters Program

- 2018 **Research Intern**, Analysis of global flash flood risk and response.

Industry Experience

PBS Digital Studios

- 2017-2021 **Writer & Co-Host, Hot Mess**, Researched and communicated climate change for an online audience. Primarily covering stories about how climate change is affecting us and how we are adapting.

Vox Media

- 2015-2017 **Lead Science Director**, *The Verge*, Creative and editorial director for science video content. Research, write, direct, and host videos for multiple platforms. Launched “Verge Science” on Facebook and “Space Craft” on YouTube. Post Production supervisor for the first 360 video interview with First Lady Michelle Obama.

CBS News

- 2014-2015 **Associate Producer**, Producer, writer, and editor of original video news packages and interviews for CBSNews.com and CBSN. Coordinator between network shows including Evening News with Scott Pelley, 60 Minutes, CBS Sunday Morning, and Face the Nation and the digital products.

Publications

Journal Articles

- 2024 Mia Wannowitz, Idowu Ajibade, Katharine J. Mach, Alexandre Magnan, Jan Petzold, Diana Reckien, Nicola Ulibarri, ... Agopian, **Miriam Nielsen**, and others. Progress and gaps in climate change adaptation in coastal cities across the globe. *Nature Cities*, volume 1, page 610–619. Nature Publishing Group, September 2024.
- 2024 **Miriam Nielsen**, Benjamin I. Cook, Kate Marvel, Mingfang Ting, and Jason E. Smerdon. The changing influence of precipitation on soil moisture drought with warming in the Mediterranean and Western North America. *Earth's Future*, volume 12, 2024.
- 2023 Harman Singh, **Miriam Nielsen**, and Helen Greatrex. Causes, impacts, and mitigation strategies of urban pluvial floods in India: A systematic review. *International Journal of Disaster Risk Reduction*, volume 93, July 2023.
- 2022 Chris Lowrie, Andrew Kruczakiewicz, Shanna N McClain, **Miriam Nielsen**, and Simon J Mason. Evaluating the usefulness of VGI from Waze for the reporting of flash floods. *Scientific Reports*, volume 12, pages 1–13. Nature Publishing Group, 2022.
- 2021 Andrew Kruczakiewicz, Mélody Braun, Shanna McClain, Helen Greatrex, Lace Padilla, Laura Hoffman-Hernandez, Kara Siahaan, **Miriam Nielsen**, Brian Llamanzares, and Zachary Flamig. Flood risk and monitoring data for preparedness and response: From availability to use. *Global Drought and Flood: Observation, Modeling, and Prediction*, pages 289–306. Wiley Online Library, 2021.
- 2021 Lea Berrang-Ford, AR Siders, Alexandra Lesnikowski, Alexandra Paige Fischer, Max W Callaghan, Neal R Haddaway, Katharine J Mach, Malcolm Araos, Mohammad Aminur Rahman Shah, Mia Wannowitz, , ..., **Miriam Nielsen**, and others. A systematic global stocktake of evidence on human adaptation to climate change. *Nature Climate Change*, volume 11, pages 989–1000. Nature Publishing Group, 2021.
- 2021 Malcolm Araos, Kripa Jagannathan, Roopam Shukla, Idowu Ajibade, Erin Coughlan de Perez, Katy Davis, James D Ford, Eranga K Galappaththi, Caitlin Grady, AJ Hudson, ..., **Miriam Nielsen**, and others. Equity in human adaptation-related responses: A systematic global review. *One Earth*, volume 4, pages 1454–1467. Cell Press, 2021.
- 2020 Melanie Harrowsmith, **Miriam Nielsen**, MC Jaime Sanchez, Erin Coughlan de Perez, Madhab Upadhyay, Catrina Johnson, Marc van den Homberg, Annegien Tijssen, Elizabeth Mulvihill Page, Stefanie Lux, and others. The future of forecast: Impact based forecasting for early action. Red Cross Red Crescent Climate Centre, 2020.

In Conference Proceedings

- 2024 **Miriam Nielsen**, Kate Marvel, and Benjamin I. Cook. How quickly is soil moisture lost? Examples from mediterranean-like climates. AGU24. AGU, 2024.
- 2022 **Miriam Nielsen**, Kate Marvel, and Benjamin I. Cook. Beginning and ending droughts in a warmer world. In *Fall Meeting 2022*. AGU, 2022.

- 2020 **Miriam Nielsen**, Helen Greatrex, and Andrew Kruczkieicz. A systematic review of flash flood risk, vulnerability and impact. In *100th American Meteorological Society Annual Meeting*. AMS, 2020.
- 2020 Andrew Kruczkieicz, **Miriam Nielsen**, Helen Greatrex, Kara Siahaan, Shanna N McClain, and Juan Bazo. Early warning early action for flash flood disasters. In *100th American Meteorological Society Annual Meeting*. AMS, 2020.
- 2018 Andrew Kruczkieicz, Helen Greatrex, Melody Braun, Zac Flamig, **Miriam Nielsen**, Brian Llamanzares, Dustin Caniglia, Hassan Ahmadul, Calum Baugh, and Erin Coughlan. Forecast-based financing for flash floods: Challenges and opportunities. In *AGU Fall Meeting Abstracts*, volume 2018, pages PA22A-17, 2018.

Invited Presentations

- Sep. 2025 **Miriam Nielsen**, *Hydroclimate extremes & gender in a changing world*, From Girls to Grannies: Gender-Responsive Climate Solutions for a Just Transition Across Generations, Taiwan Green Energy for Charity Association (TGECA) and STUF Asia-Pacific Center, Climate Week NYC.
- Mar. 2025 **Miriam Nielsen**, Grant Woods, *Look I made you some content: Assigning and Evaluating Creative Assignments*, Center for Teaching and Learning, Columbia University, NY, NY.
- Mar. 2024 **Miriam Nielsen**, *Flipped classrooms: what works, what doesn't, and what's fun*, Center for Teaching and Learning, Columbia University, NY, NY.
- Oct. 2023 **Miriam Nielsen**, *How to talk about talking about climate change*, Center for Teaching and Learning, Columbia University, NY, NY.
- Nov. 2019 **Miriam Nielsen**, Andrew Kruczkieicz, Helen Greatrex, *Early Warning, Early Action for Flash Floods*, Tropical Meteorology, Hydrology, and Disasters Mitigation Forum, Hainan, China.
- May 2019 Andrew Kruczkieicz, **Miriam Nielsen**, *Experiencing Discrepancies in "Reputable Data" in the Disaster Management Cycle*, United Nations Group of Experts on Geographical Names: First Session, NY, NY.
- Aug. 2018 **Miriam Nielsen**, Brian Llamanzares, *Global Flash Flood Risk*, NASA Goddard Space Flight Center, Greenbelt, MD .
- Jul. 2018 **Miriam Nielsen**, Brian Llamanzares, *Investigating Flash Flood Risk*, The World Bank and Mercy Corps, Washington, DC.
- Jul. 2018 **Miriam Nielsen**, *Climate Change but Make it Fashion*, PBS Nerd Night, Vidcon, Anaheim, Ca.
- Jan., May **Miriam Nielsen**, *Environmental Sustainability through a Creative Lens*, Rohatyn Center for Global Affairs Symposium, Middlebury, VT.

Fellowships & Awards

- 2024 **Senior Lead Teaching Fellow**, Center for Teaching and Learning, Columbia University
- 2023 **Lead Teaching Fellow**, Center for Teaching and Learning, Columbia University
- 2022 **Climate Creator to Watch**, The Center for Climate, Health, and the Global Environment at Harvard T.H. Chan School of Public Health and Pique Action
- 2021 **Risk & Resilience Fellow**, DATArtathon
- 2020 **Dean's Fellow**, Columbia University
- 2012 **Mellon Foundation Research Grant**, Middlebury College

Selected News Media

- Jun. 2018 *Hot Mess PBS*, "Why don't we hear about the Ozone Hole anymore?" (**Writer, Host**). [Video]
- Mar. 2018 *State of the Planet*, "Miriam Nielsen Wants to Share Science with the Masses" (**Interview**). [Article]

May 2017 *Earthjustice*, "Young Director Raises Funds for Earthjustice through Project for Awesome"
(Interview).[Article]

Technical Skills

Programming Python, MATLAB, R, HTML 5, CSS, L^AT_EX

Languages

Software arcGIS, qGIS, Adobe Creative Suite, DaVinci Resolve, Git, IRI Data Library, Google Earth Engine
Tools

Teaching & Outreach

Columbia University

2023-2025 **Climate Modeling & Projections, Climate Science Primer**, Lecturer for Columbia Climate School in the Green Mountains.

2023 **Dynamics of Climate Variability & Change**, Curriculum, Course Design.

2022-2023 **Science for Sustainable Development**, Lead Teaching Assistant.

Middlebury College

2013 **Mathematical Foundations of Computing**, Teaching Assistant.

2012-2014 **Introduction to Computing**, Teaching Assistant.

Additional Activities

2025-2026 **Scientist-in-Residence**, New York Academy of Sciences & P.S. 9 The Sarah Smith Garnet School.

2024 **Study Hall Sustainability**, Presenter, Arizona State University & Complexly.

2024 **Rukh: Portrait of a Tree & Shrine of Trash**, Exhibits at Patan Museum, Kathmandu, Nepal.

2023 **Crash Course Climate & Energy**, Script Consultant, Complexly.

2019 **Climate and Design**, Guest Critic for Final Thesis Presentations, New York University.

Passions

ultimate frisbee ▪ cycling ▪ photography ▪ hiking ▪ blueberries ▪ music making.