

# MIRIAM NIELSEN

✉ [miriam.nielsen@columbia.edu](mailto:miriam.nielsen@columbia.edu)  
📄 [zentouro.ideo.columbia.edu](http://zentouro.ideo.columbia.edu)  
🐙 [github](#) 📺 [video](#) 🐦 [bluesky](#)

## Education

- 2020-Present **Ph.D. Candidate, Earth & Environmental Sciences, Columbia University & NASA Goddard Institute For Space Studies.**  
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

### 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*, Research and communicate 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 Wannewitz, 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, page e2023EF003987, 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, page 103751, July 2023.
- 2022 Chris Lowrie, Andrew Kruczkiewicz, 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 Kruczkiewicz, Mélody Braun, Shanna McClain, Helen Greatrex, Lacey 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 Wannewitz, , ..., **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 Uprety, 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 Kruczkiewicz. A systematic review of flash flood risk, vulnerability and impact. In *100th American Meteorological Society Annual Meeting*. AMS, 2020.
- 2020 Andrew Kruczkiewicz, **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 Kruczkiewicz, 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

- Nov. 2019 **Miriam Nielsen**, Andrew Kruczkiewicz, Helen Greatrex, *Early Warning, Early Action for Flash Floods*, Tropical Meteorology, Hydrology, and Disasters Mitigation Forum, Hainan, China.
- May 2019 Andrew Kruczkiewicz, **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 2014 **Miriam Nielsen**, *Environmental Sustainability through a Creative Lens*, Rohatyn Center for Global Affairs Symposium, Middlebury, VT.

## Relevant Coursework

### **Graduate.**

- Quantitative Models
- Tropical Meteorology
- Idealized Models of Climate Processes
- Carbon Cycle
- Geophysical Fluid Dynamics
- Environmental Data Analysis
- Atmospheric Dynamics
- Plant Ecophysiology
- Climate Change and Disaster Management
- Climate Dynamics & Variability
- Regional Climate Dynamics
- Biological Oceanography

### **Undergraduate.**

- GIS & Remote Sensing
- Ecology and Evolution
- Oceanography
- Biological Statistics
- Differential Equations
- Data Structures
- Computer Architecture
- Mathematical Computing
- Computer Vision
- Information Visualization

## 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 Languages	Python, MATLAB, R, HTML 5, CSS, $\text{\LaTeX}$
Software Tools	arcGIS, qGIS, Adobe Creative Suite, Git, IRI Data Library, Google Earth Engine

## 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

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

*References Available upon Request*