MIRIAM NIELSEN

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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*, Researching and communicating 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   **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, 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 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

2022   **Miriam Nielsen**, Katherine Marvel, and Benjamin 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, Anheim, 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, LaTeX
Software Tools	arcGIS, qGIS, Adobe Creative Suite, Git, IRI Data Library, Google Earth Engine

Teaching & Outreach

Columbia University

2023	**Dynamics of Climate Variability & Change**, Curriculum, Course Design.
2022-2023	**Science for Sustainable Development**, 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