

# Nkosi Muse

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## EDUCATION

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<b>University of Miami</b> <i>Doctor of Philosophy Candidate (4<sup>th</sup> year)</i> Environmental Science & Policy	Miami, FL
<b>Georgia State University</b> <i>Master of Science</i> Geosciences/Climate Policy, GIS Certificate	Atlanta, GA May 2020
<b>University of North Carolina at Charlotte</b> <i>Bachelor of Science</i> Meteorology, Math Minor	Charlotte, NC May 2017

## RESEARCH EXPERIENCE

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<b>University of Miami</b> <i>Doctoral Dissertation (in progress)</i> “Understanding land surface temperature’s role in heat exposure in a diverse, subtropical urban region” Advisor: Katharine J. Mach, PhD Identifying extreme heat exposure and vulnerability in Miami-Dade in order to inform equitable heat resilience planning and policy.	Miami, FL 2020-
<b>Georgia State University</b> <i>Master’s Thesis</i> “An Analysis of Climate Resilience Planning in Atlanta, Georgia” Advisor: David M. Iwaniec, PhD Identified the climate hazards that urban Atlanta is most vulnerable to, in order to inform inclusive and equitable planning to mitigate exposure and risk. Manuscript published.	Atlanta, GA 2018-2020
<b>Significant Opportunities in Atmospheric Research &amp; Science (SOARS)</b> <i>Protege</i> <b>2017:</b> “Evaluating High-resolution CESM Hurricane Climatology of the North Atlantic: Comparing Model Landfalls to Observational Landfalls”	Boulder, CO

Advisors: Nan Rosenbloom, PhD (NCAR), Colin Zarzycki, PhD (NCAR)  
Evaluated the performance of the Community Earth System Model's hurricane climatology in the North Atlantic Ocean by simulating the tracks and development of historic storms, and comparing them to actual observations. The model best simulated storms in the Caribbean, and performed the least well along the east coast of the United States.

**2016:** "Understanding and Communicating Future Flood Losses Using Weather Typing"  
Advisors: James Done, PhD (NCAR), Lesley L. Smith, PhD (NOAA)  
Assessed different weather patterns (weather types) and determined which is most likely to cause high damages due to flooding. Some weather types had tendencies to cause higher flood damages than others.

**2015:** "Ingesting Geospatial Data into Hazard Services' Database for National Weather Service Flood Alerts"  
Advisors: Kevin Manross (NOAA), Joseph Wakefield (NOAA), Tracy Hansen (NOAA)  
Developed a program in Shell/Bash scripting for the National Weather Service/Hazard Services at the NOAA Earth Systems Research Laboratory. This program quickly ingested geospatial data (shapefiles) into the AWIPS Weather forecasting system for prompt flooding alerts, warning the public faster and saving lives.

### **Partnership Education Program (PEP)**

Woods Hole, MA

*Research Intern*

2014

Completed an academic course for credit in marine biology, environmental science, and oceanic physics, followed by a research project at the NOAA Northeast Fisheries Science Center: "Forecasting Particle Drift in New England Coastal Waters".

Advisor: James Manning (NOAA)

Forecasted ocean currents in the Gulf of Massachusetts Bay using historical drifter track data. Applications include the forecasting of fish larvae and planktonic drift, harmful algal blooms, and oil spill containment.

## **PROFESSIONAL EXPERIENCE**

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### **2030 Climate Champion**

2024

Selected by The Asia Foundation as a fellow in the "2030 Climate Champions: Young Leaders for a Brighter U.S.-China Future" program—designed to foster collaboration on international climate change issues.

### **Local Conference on Youth Delegate**

2023

Selected as a United States youth delegate (under 35 years of age) to develop a national statement on climate priorities and goals to be presented at COP28.

### **U.S.-Korea Young Climate Change Activist**

2022

Selected to the 2022 United States Young Climate Change Activist cohort (22-30 years of age)—a program designed to advance climate change policy and priorities between the United States and the Republic of Korea.

- Climate Resilience Committee, City of Miami** 2021-  
*Vice Chairman, Advocate for Marginalized & Vulnerable Communities*  
 City of Miami District 5 Commissioner appointed member of the municipal board that advises city government on matters of climate change and resilience planning.
- Global Sustainability Scholars (GSS) Early Career Steering Committee** 2021-  
 Member of the early career steering committee for the Global Sustainability Scholars program and RaMP-UP Fellows Program. Advisory board for program staff concerning new hires, new scholars, and program curricula.
- Georgia State University** 2019-2020  
*Lab Coordinator*  
 Coordinator for 29 sections (over 800 students) of Weather and Climate Labs (Geography 1112K) in the Geography Department at Georgia State University. Responsible for the supervision and training of 12 teaching assistants, management of over \$50,000 in lab equipment, and lab curriculum.
- Science ATL** 2019-2020  
*Science Communication Fellow*  
 Participant in the Science ATL (founders of the Atlanta Science Festival) Science Communication Fellowship which requires: scientific outreach to students grades K-12, production of “Science of Everyday Life” articles—documenting the science that goes unnoticed during our daily lives, and scientific talks around the city of Atlanta.
- Global Sustainability Scholars (GSS)** 2019  
*Fellow*  
 GSS connects several undergraduate students (supervised by 2 fellows) with different research projects funded by the Belmont Forum, an international funding agency for climate, sustainability, and resilience work. Traveled as a fellow with 9 undergraduate scholars to visit these different research and policy projects in the United States, United Kingdom, and Germany.
- COMPASS Science Communication Workshops** 2019  
 Participated in rigorous science communication training and activities sponsored by COMPASS (Communication Partnership for Science and the Sea), based out of Portland, Oregon.
- Georgia State University** 2018-2020  
*Teaching Assistant*  
 Instructor of Weather and Climate Labs (Geography 1112K) in the Geography Department at Georgia State University, responsible for teaching approximately 100 students.
- Science Outside the Lab (SoTL)** 2018  
 Embarked on a trip sponsored by the Urban Resilience to Extremes Sustainability Research Network to Washington D.C., for fellows and associates to get experience in interdisciplinary applications of science and research.
- Student Undergraduate Laboratory Internship (SULI)** 2017

### *Strategic Initiatives Intern*

Worked on new ways to connect the public to science and research. Wrote spotlight articles for the Earth and Environmental Sciences Area newsletter at Lawrence Berkeley National Laboratory in Berkeley, California.

### **Scientific Data Workshops** 2016

Participated in a weekly data processing and computing/coding workshop hosted by Keith Maull, PhD, in Boulder, Colorado.

### **Minorities Striving and Pursuing Higher Degrees in Science** 2015

#### *Mentee*

Professional development program at the annual AGU meeting in San Francisco followed by virtual professional and scientific development activities.

## **AWARDS & HONORS**

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### **Rosenstiel Graduate Student Leadership Award: Outstanding Outreach** 2024

Awardee of the University of Miami's Rosenstiel School for Marine, Atmospheric, and Earth Sciences' Outstanding Outreach Award, acknowledging voluntary community beyond the boundaries of the university.

### **Legacy Miami's 40 Under 40: Black Leaders of Today & Tomorrow** 2022

Selected as a honoree for Legacy Magazine's 40 Under 40: Miami's Black leaders of today and tomorrow.

### **AMS 102<sup>nd</sup> Annual Meeting Outstanding Oral Presentation Award** 2022

First place award winner for the Outstanding Oral Presentation at the Conference on Environment and Health.

### **University of Miami Racial Justice Grant Awardee** 2021

Awardee of the University of Miami's Racial Justice Grant Pilot Program, awarding small grants to perform community work with a racial justice lens.

### **University of Miami Dean's List** 2020-

Maintained a GPA of 3.5 or higher for the semester.

### **McKnight Doctoral Fellow** 2020-

Selected as a recipient of the prestigious McKnight Doctoral Fellowship for doctoral scholars at distinguished Florida universities.

### **Georgia State University Lead Teaching Assistant** 2019

Selected as the lead to supervise all teaching assistants in the Geosciences Department during the fall of 2019.

### **UREx SRN Research Grant** 2020

Awarded funds by the Urban Resilience to Extremes Sustainability Research Network to perform urban heat research.

- UREx SRN Research Associate** 2018-  
Selected as a fellow by the Urban Resilience to Extremes Sustainability Research Network to conduct sustainability and urban climate resilience research.
- Georgia State University President's List** 2018-2019  
Maintained a GPA of 3.8 or higher for the semester.
- UNC Charlotte Dean's List** 2016-2017  
Maintained a GPA of 3.5 or higher for the semester.
- Omega Psi Phi 6<sup>th</sup> District Undergraduate Scholar of the Year** 2017  
Awarded the Undergraduate Scholarship for the highest achieving undergraduate scholar in North Carolina and South Carolina.
- SOARS Merit Scholarship** 2015-2017  
Award grant for high academic and research achievement from the Significant Opportunities in Atmospheric Research and Science program.
- America East Track & Field Conference Champion** 2013-2014  
Member of the Division I winningest program in America East Track & Field History at the University at Albany.

## **PUBLICATIONS**

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- Muse, N., Clement, A., & Mach, K. J. (2024). Land surface temperature and its limits as a proxy to surface air temperature in a seasonally wet, subtropical region (in review)
- Muse, N., Iwaniec, D. M., Wyczalkowski, C., & Mach, K. J. (2022). Heat exposure and resilience planning in Atlanta, Georgia. *Environmental Research: Climate*, 1(1), 015004. <https://doi.org/10.1088/2752-5295/ac78f9>
- Muse, Nkosi, "An Analysis of Climate Resilience Planning in Atlanta, Georgia." Thesis, Georgia State University, 2020. doi: <https://doi.org/10.57709/17509359>

## **PRESENTATIONS**

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- Muse, N., Kempner, M.: "Science Communication and Social Media", University of Miami Course CIM 489/689 – Internet Culture: Social Media, Image, and Our New Reality, 4/2024, Course Presentation and Discussion
- Muse, N.: "Climate Gentrification in Miami", Catalyst Miami Community Leadership on the Environment, Advocacy, and Resilience (CLEAR) Program, Miami, FL, 3/2024, Oral Presentation
- Muse, N.: "Climate Gentrification and the African Disapora", The Chisholm Legacy Project's Sea Level Rise Certification Program, 5/2023

Muse, N., Pinto, T.: “Contemporary Science & Environmental Justice”, University of Miami Course ECS 201 – Contemporary Environmental Issues, 3/2023, Course Lecture

Muse, N., Iwaniec, D., Wycalkowski, C., Mach, K. J.: “Heat Exposure & Resilience Planning in Atlanta, Georgia”, AGU Annual Meeting, Chicago, IL, 12/2022, Oral Presentation

Muse, N., Hamdoun, S.: “Climate Action, Life Under Water and on Land”, Arizona State University Course FIS 337 – Innovation and Global Development, 11/2022, Course Lecture

Muse, N., Lewis, C., Flores, D.: “Taking it to the Streets: Local Focus On Miami Beach’s Journey to Climate Resiliency”, Aspen Ideas Future Leaders Climate Summit, Miami, FL, 5/2022, Panel

Muse, N.: “Training in Heat-Related Equity and Disparities Research Collaborative”, University of Miami Climate Resilience Academy Symposium, Miami, FL, 4/2022, Oral Presentation

Muse, N.: “A Journey Into STEM”, Miami-Dade College Homestead, Miami, FL, 3/2022, Keynote Presentation

Muse, N.: “Climate Risks & Preparedness/Climate Gentrification”, Rho Rho Rho Marine Science Honor Society, Miami, FL, 2/2022, Oral Presentation

Muse, N., Iwaniec, D., Wycalkowski, C., Mach, K. J.: “Heat Exposure & Resilience Planning in Atlanta, Georgia”, AMS 102<sup>nd</sup> Annual Meeting, Houston, TX, 1/2022, Oral Presentation

Muse, N.: “Climate Change and the Inner City”, Sanctuary Farm Philadelphia, Philadelphia, PA, 3/2021, Oral Presentation

Mach, K. J., Muse, N., Turek-Hankins, L.: “Climate Change 2021: Managing Floods, Heat, and Fires to Keep People and Nature Safe”, University of Miami Sea Secrets, Miami, FL, 3/2021, Oral Presentation

Muse, N., Iwaniec, D., Wycalkowski, C., Milligan, R.: “An Analysis of Climate Resilience Planning in Atlanta, Georgia”, Georgia State University, 4/2020, Thesis Defense

Muse, N., Iwaniec, D.: “An Analysis of Climate Resilience Planning in Atlanta, Georgia”, UREx SRN All Hands Meeting, Baltimore, MD, 4/2019, Oral Presentation

Muse, N., Rosenbloom, N., Zarzycki, C.: “Evaluating High-resolution CESM Hurricane Climatology of the North Atlantic: Comparing Model Landfalls to Observational Landfalls”, AGU Fall Meeting, New Orleans, LA, 12/15/2017, Poster Presentation

Muse, N., Rosenbloom, N., Zarzycki, C.: “Evaluating High-resolution CESM Hurricane Climatology of the North Atlantic: Comparing Model Landfalls to Observational Landfalls”, 2017 SOARS Colloquium, Boulder, CO, Oral/Poster Presentation

Muse, N., Done, J.: "Understanding and Communicating Future Flood Losses Using Weather Typing", AMS 97<sup>th</sup> Annual Meeting, Seattle, WA, 1/2017, Poster Presentation

Muse, N., Done, J.: "Understanding and Communicating Future Flood Losses Using Weather Typing", NABG 35<sup>th</sup> Annual Technical Conference, New Orleans, LA, 9/2016, Poster Presentation

Muse, N., Done, J.: "Understanding and Communicating Future Flood Losses Using Weather Typing", 2016 SOARS Colloquium, Boulder, CO, Oral/Poster Presentation

Muse, N., Manross, K., Hansen, T., Wakefield, J., Williams, S.: "Ingesting Geospatial Data into Hazard Services' Database for National Weather Service Flood Alerts", AMS 96th Annual Meeting, New Orleans, LA, 1/2016, Oral Presentation

Muse, N., Manross, K., Hansen, T., Wakefield, J., Williams, S.: "Ingesting Geospatial Data into Hazard Services' Database for National Weather Service Flood Alerts", UNC Charlotte Undergraduate Research Symposium, Charlotte, NC, 1/2016, Poster Presentation

Muse, N., Manross, K., Hansen, T., Wakefield, J., Williams, S.: "Ingesting Geospatial Data into Hazard Services' Database for National Weather Service Flood Alerts", 2015 SOARS Colloquium, Boulder, CO, Oral/Poster Presentation

Muse, N., Manning, J.: "Forecasting Particle Drift in New England Coastal Waters", PEP 2014 Symposium, Woods Hole, MA, 8/2014, Oral/Poster Presentation

## **PROFESSIONAL AFFILIATIONS**

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American Geophysical Union (AGU)

American Meteorological Society (AMS)

Black In Environment

Miami Climate Alliance (MCA)

National Association for Black Geoscientists (NABG)

Urban Resilience to Extremes Sustainability Research Network (UREx SRN)

Science ATL (Engineers of the Atlanta Science Festival)

## REFERENCES

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Katharine Mach, PhD, Associate Professor/Program Director, University of Miami  
Rosenstiel School & Abess Center  
kmach@rsmas.miami.edu

Kirsten Rowell, PhD, GSS/Research Leadership Program Director, University of Colorado,  
Boulder  
Kirsten.Rowell@Colorado.edu

Ambrose Jearld, PhD, Former Director of PEP & Academic Programs at NEFSC, NOAA  
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Kevin Manross, Researcher, Hazard Services-Global Systems Division of the Earth Systems  
Research Laboratory, NOAA  
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