

Nathalie G. Rivera-Torres

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EDUCATION

University at Albany, Albany, NY

Master of Science in Atmospheric Sciences

Department of Atmospheric and Environmental Sciences (DAES)

Advisors, Dr. Kristen L. Corbosiero, Dr. Brian H. Tang

University of Puerto Rico (UPR) Mayagüez, Mayagüez, PR

Bachelor of Science in Physics

Department of Physics | Magna Cum Laude

EXPERIENCE

University at Albany, Graduate Research Assistant, Albany, NY | August 2019 – Present

Department of Atmospheric and Environmental Sciences

Conducted research on tropical cyclones and tropical meteorology

- Studied Sally's (2020) downshear reformation using ensemble forecasting
- Created a climatology of Atlantic basin tropical cyclones that have undergone downshear reformation from 1998-2020
- Examined large-scale factors associated with downshear reformation using reanalysis data
- Tested the sensitivity of downshear reformation to environmental parameters using idealized simulations
- Investigated Dorian's (2019) intensification due to land interaction using numerical modeling
- Developed a numerical model to study islands' sea breeze

Radio Isla 1320, Broadcaster, San Juan, PR | June 2021 – November 2021

Prepared weather forecasts for Puerto Rico and the Caribbean

- Prepared and broadcasted the weather forecast twice a day
- Shared content and projections using the radio station's social media and informed live during weather-related emergencies

NCAR, SOARS Intern, Boulder, CO | Summer 2018, Summer 2019

Mesoscale and Microscale Meteorology Laboratory

Conducted research on the impact of high-resolution terrain data on numerical modeling

- Studied the impact of high-resolution terrain data in simulations of the landfall of Hurricane Maria in Puerto Rico using stochastically perturbed ensembles
- Analyzed the wind speed and the accumulated precipitation over Puerto Rico when accurately representing the mountainous terrain of the island

Research Advisors, Dr. Falko Judt, Dr. James Done

UPR Mayagüez, *Undergraduate Research Assistant*, Mayagüez, PR | Fall 2017

Department of Geology

Impact of Hurricane Maria (2017) on coastal communities in Puerto Rico

- Investigated the changes in vegetation, coastal erosion, river discharge, and terrain after the effects of Hurricane Maria in Puerto Rico using remote sensing by comparing aerial and satellite imagery before and after the hurricane's landfall.

Research Advisor, Dr. Fernando Gilbes

PUBLICATIONS

Rivera Torres, N.G., K.L. Corbosiero, B.H. Tang, 2023: Factors associated with the downshear reformation of tropical cyclones. *Mon. Wea. Rev.*

TECHNICAL SKILLS

Operating Systems: *Microsoft Windows, Mac OS, Linux/Unix, Shell Scripting, Github*

Programming Languages: *Python, C++, MATLAB, NCAR Programming Language, LaTeX, FORTRAN, Java*

Languages: *Spanish*

Numerical Modeling: *WRF-ARW, Cloud Model 1 (CM1)*

Datasets and Formats: *GridSat, ERA5-Reanalysis, GFS, GEFS, GRIB, NetCDF, ATCF, IBTRACS*

CONFERENCE PRESENTATIONS

Rivera-Torres, N.G., Tang, B., Corbosiero, K., *An ensemble approach to investigate the downshear reformation of Sally (2020)*. 35th Conference on Hurricane and Tropical Meteorology. May 2022. **Oral Presentation**

Rivera-Torres, N.G., Tang, B., Corbosiero, K., *Examining the Environmental Factors Associated with Downshear Reformation in Tropical Cyclones*. SACNAS NDiSTEM Digital Conference. SACNAS Research Day: Highlighting Our Graduate Students. October 2021. **Oral Presentation**

Rivera-Torres, N.G., Tang, B., Corbosiero, K., *Examining the Environmental Factors Associated with Downshear Reformation in Tropical Cyclones*. 34th Conference on Hurricane and Tropical Meteorology. May 2021. **Poster**

Rivera-Torres, N.G., Judt, F. *Effect of High-Resolution Topography in Simulations of Hurricane Maria's Landfall in Puerto Rico*. AMS 100th Annual Meeting. Tropical Meteorology and Tropical Cyclones Symposium. Boston, MA. January 2020. **Poster**

Rivera-Torres, N.G., Judt, F. *A Numerical Study on the Landfall of Hurricane Maria in Puerto Rico*. 2019 Summer Intern Research Presentations, Boulder, CO. August 2019. **Poster**

Rivera-Torres, N.G., Judt, F. *A Numerical Study on the Landfall of Hurricane Maria in Puerto Rico*. 2019 SOARS Colloquium. National Center for Atmospheric Research, Boulder, CO. August 2019. **Oral Presentation**

Rivera-Torres, N.G., Judt, F. *The Impact of High-Resolution Terrain in WRF Simulations of Hurricane Maria*. Physics and Meteorology Symposium. University of Puerto Rico, Mayagüez, P.R. September 2018. **Oral Presentation**

Rivera-Torres, N.G., Judt, F. *The Impact of High-Resolution Terrain in WRF Simulations of Hurricane Maria*. 2018 Summer Intern Research Presentations, Boulder, CO. August 2018. **Poster**

Rivera-Torres, N.G., Judt, F. *The Impact of High-Resolution Terrain in WRF Simulations of Hurricane Maria*. 2018 SOARS Colloquium, National Center for Atmospheric Research, Boulder, CO. August 2018. **Oral Presentation**

LEADERSHIP, OUTREACH, AND VOLUNTEER WORK

EAGER Project, NCAR, Participant | May 2022 – Present

- Participated in the NSF-funded project- “Elevating and empowering Hispanic/Latinx voices through video: Reducing barriers in academia and building an ecosystem for success in the Earth system sciences.”
- Filmed interviews with Hispanic community members to share their stories and understand how the university system can change to create a more inclusive environment for individuals in geoscience

Academic Journals, Reviewer | October 2021 - Present

- American Meteorological Society: *Monthly Weather Review*

AMS Committee on Hispanic and Latinx Advancement, Student Ambassador | September 2021 - Present

- Created a database with information about internships, scholarships, and fellowships for undergraduate and graduate students

DAES Tutoring Program, University at Albany, Tutor, Albany, NY | August 2021 - Present

- Helped undergraduate students to improve their skills and understanding in calculus, differential equations, physics, and atmospheric Sciences

Puertorriqueños en las Ciencias Atmosféricas y Meteorología (PCAM) Mentoring Program, Mentor | June 2021 - Present

- Paired with an undergraduate student from Puerto Rico to guide them through their degree in geology and meteorology and answer questions about internships, fellowships, graduate school, and graduate school applications

DAES Inclusion and Diversity Committee, University at Albany, Volunteer, Albany, NY | Summer 2022

- Contributed to a project to examine the enrollment statistics of the STEM departments at UAlbany
- Quantified the enrollment tendencies from 2006-2020 by department, degree, race, ethnicity, and gender

UAlbany Weather, Climate, and Chemistry Camp, University at Albany, Volunteer, Albany, NY | Summer 2021, Summer 2022

- Helped high school students with their research projects and presentations, teaching them how to follow the scientific method, create figures, and present their science-related work to different audiences
- Presented essential information about tropical cyclones and their impacts on our society

PCAM Weather Camp, *Volunteer* | Summer 2021, Summer 2022

- Gave a lesson to high school students about tropical cyclones, their development, structure, and impacts.

Graduate Student Mentorship Program, University at Albany, DAES, *Mentor*, Albany, NY | September 2021 – May 2022

- Paired with a first-year student to answer their questions about the department and helped to acclimate to graduate school

REU and Internship Night, University at Albany, *Presenter*, Albany, NY | November 2019

- Presented information to undergraduate students about internships, scholarships, and fellowships and taught them how to complete their application package

UPRM AMS Student Chapter Outreach Committee, UPRM, *Leader*, Mayagüez, PR | August 2018 – May 2019

- Organized outreach activities, including seminars about professional development, graduate school, internships, and fellowships applications.
- Visited schools to teach them about fundamental concepts of atmospheric sciences, including density, pressure, tropical cyclones, flooding, and other hazards, using interactive activities that allowed them to develop practical skills
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UPRM AMS Student Chapter Journal, UPRM, *Co-editor*, Mayagüez, PR | August 2017 – May 2018

- Wrote and edited articles covering different environmental and atmospheric sciences topics for the 11th volume of the journal

FELLOWSHIPS AND AWARDS

University at Albany Presidential Fellowship, University at Albany | Fall 2019

Carson Carr Graduate Diversity Fellowship, University at Albany | Fall 2019

SOARS Scholarship, University Corporation for Atmospheric Research | Fall 2018

PCAM Scholarship, University of Puerto Rico at Mayagüez | Spring 2018

Asociación de Claustales Jubilados Scholarship, University of Puerto Rico | Fall 2018, Fall 2019

University of Puerto Rico Honor Roll Scholarship, Mayagüez, P.R | Fall 2016- Spring 2019

Nicolás Rodríguez Matos Science Award and Scholarship, Comerío, P. R | Summer 2015
