Gabriel Rios
(he/him/his)

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Education

2022 -	**Princeton University**	Ph.D., Atmospheric and Oceanic Sciences M.A., Atmospheric and Oceanic Sciences (2024) *Advisor:* Gabriel Vecchi
2020 - 2022	**The City College of New York**	M.E., Mechanical Engineering *Advisor:* Prathap Ramamurthy
2014 - 2018	**Vanderbilt University**	B.E., Mechanical Engineering *Minors:* Materials Science, Scientific Computing

Awards

2023 - 2027	**Department of Energy**	Computational Science Graduate Fellowship
2022	**Princeton University**	President's Fellowship
	National GEM Consortium	Ph.D. Engineering and Science Fellowship
	National Science Foundation	Graduate Research Fellowship (honorable mention)
2021	**NOAA-CESSRST**	Professional Development Award
2020 - 2022	**NOAA-CESSRST**	Graduate Fellowship

Peer-reviewed publications

G Rios, W Yang, G Vecchi (2024). "Reducing tropical cyclone activity in global climate models by evaporative suppression". *in preparation.*

G Rios, JC Peña, H Gamarro, P Ramamurthy (2024). "Observations of boundary layer structure and dynamics over a coastal urban area during extreme heat events". *in preparation.*

RS Arthur, A Rybchuk, TW Juliano, **G Rios**, S Wharton, JK Lundquist, J Fast (2024). "Evaluating mesoscale model predictions of diurnal speedup events in the Altamont Pass Wind Resource Area of California". *in review, Wind Energy Science.*

G Rios, RS Arthur, S Wharton, J Fast (2024). "Lidar-based evaluation of HRRR performance in the Diablo Range". *in review, Weather and Forecasting.*

K Rahman, **G Rios**, H Gamarro, O Addasi, JC Peña, J Gonzalez-Cruz, B Borstein, P Ramamurthy (2024). "The Boundary Layer Characteristics of Coastal Urban Environments". *Theoretical and Applied Climatology.* DOI: https://doi.org/10.1007/s00704-024-05036-z.

G Rios, P Ramamurthy (2023). "Turbulence in the mixed layer over an urban area: a New York City case study". *Boundary Layer Meteorology.* DOI: https://doi.org/10.1007/s10546-023-00819-9.

G Rios, P Ramamurthy (2022). "A novel model to estimate sensible heat fluxes in urban areas using satellite-derived data". *Remote Sensing of Environment.* DOI: https://doi.org/j.rse.2021.112880.

G Rios, RJ Morrison, Y Song, SJ Fernando, A Gelbard, H Luo (2020). "Computational fluid dynamics analysis of surgical approaches to bilateral vocal fold immobility". *The Laryngoscope.* DOI: https://doi.org/10.1002/lary.27925.

Presentations

G Rios, W Yang, G Vecchi. "Tropical cyclones cool and dry the tropics". *AGU Fall Meeting 2024.* 9 Dec 2024. Washington, DC. Talk.

G Rios, W Yang, B Zhang, G Vecchi, B Soden. "What would a climate without tropical cyclones look like? A preliminary analysis of WISHE suppression on TCs and climate". *104th AMS Annual Meeting.* 30 Jan 2024. Baltimore, MD. Poster.

G Rios, W Yang, B Zhang, G Vecchi, B Soden. "Exploring the effects of tropical cyclone suppression on climate in global climate models". *AGU Fall Meeting 2023.* 11-15 Dec 2023. San Francisco, CA. Talk.

RS Arthur, **G Rios**, S Wharton, TW Juliano, A Rybchuk, JK Lundquist, JC Golaz, TA Edmunds.. "Characterizing speedup flows in the Altamont Pass Wind Resource Area of California: observations and model evaluation". *AGU Fall Meeting.* 11-15 Dec 2023. San Francisco, CA. Talk.

G Rios, W Yang, B Zhang, G Vecchi, B Soden. "What would a climate without tropical cyclones look like? A preliminary analysis of WISHE suppression on TCs and climate". *10th Northeast Tropical Workshop*. 5 Jun 2023. Albany, NY. Talk.

P Ramamurthy, MD K Rahman, **G Rios**. "URBANSYMP Observations of Coastal-Urban Boundary Layer Characteristics". *AMS 103rd Annual Meeting*. 11 Jan 2023. Denver, CO. Talk.

P Ramamurthy, JE Gonzalez-Cruz, **G Rios**. "24BLT Spatial and Temporal Variability in Coastal Urban Boundary Layer Characteristics". *AMS 103rd Annual Meeting*. 11 Jan 2023. Denver, CO. Talk.

P Ramamurthy, **G Rios**. "Observations of urban boundary layer characteristics during extreme heat episodes". *AGU Fall Meeting 2022*. 14 Dec 2022. Chicago, IL. Talk.

G Rios, P Ramamurthy. " Boundary layer structure and dynamics over New York City during extreme heat events". *2nd Annual NYS Mesonet*. 13 Sep 2022. Albany, NY. Poster.

G Rios, P Ramamurthy. "Estimating urban sensible heat flux using satellite-based data". *10th Biennial NOAA EPP/MSI Education and Science Forum*. 6 Apr 2022. Virtual. Poster.

G Rios, P Ramamurthy, M Arend. "Observations of urban boundary layer characteristics during extreme heat episodes". *AGU Fall Meeting 2021*. 13 Dec 2021. Virtual. Poster.

G Rios, P Ramamurthy. "Estimating urban sensible heat flux using satellite-based data". *EGU General Assembly 2021*. 19 Apr 2021. Virtual. Talk.

G Rios, H Luo. "Computational fluid dynamics analysis of surgical approaches to bilateral vocal fold immobility". *Vanderbilt Institute for Surgery and Engineering Assembly*. 26 Apr 2018. Nashville, TN. Poster.

Service & outreach

2024 — **Student/Early Career Convener**, AGU Fall Meeting 2024
Co-organized session *GC041 - Caribbean Environmental Variability and Change: Current and Impending Risks under Global Warming* with aim of establishing a platform for discussion of Caribbean climate science and risks, as well as the promotion of scientists from underrepresented demographics.

2023 - — **Co-founder & Director**, Caribbeans for Climate
501(c)(3) organization with a mission of promoting climate science accessibility to Caribbean stakeholders through education, access, and advocacy.

2022 - — **Student volunteer**, Princeton AOS Outreach & Engagement
Organized and assisted with several events, ranging from guest lectures at colleges in New York and New Jersey, to in-person demonstrations targeted at K-12 students.

Work experience

2024 — **DOE Computational Science Graduate Fellowship Graduate Intern**, Sandia National Laboratories
Albuquerque, NM

2023 — **Atmospheric, Earth & Energy Graduate Summer Student Intern**, Lawrence Livermore National Laboratory
Livermore, CA (remote)

2022 — **Atmospheric, Earth & Energy Graduate Summer Student Intern**, Lawrence Livermore National Laboratory
Livermore, CA (remote)

2018 - 2020 — **Engineer II**, Collins Aerospace
Windsor Locks, CT

2017 — **Quality Engineering Intern**, Biedermann Medtech
Miami, FL

2016 — **Edison Engineering Development Program Intern**, General Electric
Plainville, CT

2015 — **Operations Management Leadership Program Intern**, General Electric
Clearwater, FL

Skills

Programming languages: Python, FORTRAN, Bash, MATLAB, HTML/CSS, JavaScript

HPC tools: OpenMP, MPI, Slurm

Other tools: Git, Jupyter, ANSYS, COMSOL, LaTeX, Google Cloud Compute Engine, Amazon Web Services

Non-programming languages: Fluent in English, Spanish, & French