

Gabriel Rios  
(he/him/his)

gabriel.rios@princeton.edu  
<https://mr-gabrielrios.github.io>

Education	2022 -	Princeton University	Ph.D., Atmospheric and Oceanic Sciences Graduate Certificate in Comp. Science & Engineering <i>Advisor:</i> Gabriel Vecchi
	2020 - 2022	The City College of New York	M.E., Mechanical Engineering <i>Advisor:</i> Prathap Ramamurthy
	2014 - 2018	Vanderbilt University	B.E., Mechanical Engineering <i>Minors:</i> Materials Science, Scientific Computing
Recent work experience	2024, 2025	DOE Computational Science Graduate Fellowship Graduate Intern, Sandia National Laboratories Albuquerque, NM	
	2022, 2023	Atmospheric, Earth & Energy Graduate Summer Student Intern, Lawrence Livermore National Laboratory Livermore, CA (remote)	
	2018 - 2020	Engineer II, Collins Aerospace Windsor Locks, CT	
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	<b>G Rios</b> , G Vecchi, W Yang (2025). "Evidence of large-scale radiative cooling induced by tropical cyclone activity". <i>in preparation</i> .		
	<b>G Rios</b> , RS Arthur, S Wharton, J Fast (2025). "Lidar-based evaluation of HRRR performance in the Diablo Range". <i>in press, Weather and Forecasting</i> . DOI: <a href="https://doi.org/10.1175/WAF-D-24-0146.1">https://doi.org/10.1175/WAF-D-24-0146.1</a> .		
	<b>G Rios</b> , W Yang, G Vecchi (2025). "Reducing tropical cyclone activity in global climate models by evaporative suppression". <i>Journal of Geophysical Research: Atmospheres</i> . DOI: <a href="https://doi.org/10.1029/2024JD043302">https://doi.org/10.1029/2024JD043302</a> .		
	RS Arthur, A Rybchuk, TW Juliano, <b>G Rios</b> , S Wharton, JK Lundquist, J Fast (2025). "Evaluating mesoscale model predictions of diurnal speedup events in the Altamont Pass Wind Resource Area of California". <i>Wind Energy Science</i> . DOI: <a href="https://doi.org/10.5194/wes-2024-137">https://doi.org/10.5194/wes-2024-137</a> .		
	W Yang, E Levin, S Menemenlis, N Scapin, M Igbino, M Chung, <b>G Rios</b> , TL Hsieh, L Deike, I Mitevski, GA Vecchi (2025). "Overview of tropical cyclones and historical perspective". <i>Tropical Cyclones and Associated Impacts</i> , 1-25. DOI: <a href="https://doi.org/10.1016/B978-0-323-95390-0.00001-7">https://doi.org/10.1016/B978-0-323-95390-0.00001-7</a> .		
	K Rahman, <b>G Rios</b> , H Gamarro, O Addasi, JC Peña, J Gonzalez-Cruz, B Borstein, P Ramamurthy (2024). "The Boundary Layer Characteristics of Coastal Urban Environments". <i>Theoretical and Applied Climatology</i> . DOI: <a href="https://doi.org/10.1007/s00704-024-05036-z">https://doi.org/10.1007/s00704-024-05036-z</a> .		
	<b>G Rios</b> , P Ramamurthy (2023). "Turbulence in the mixed layer over an urban area: a New York City case study". <i>Boundary Layer Meteorology</i> . DOI: <a href="https://doi.org/10.1007/s10546-023-00819-9">https://doi.org/10.1007/s10546-023-00819-9</a> .		
	<b>G Rios</b> , P Ramamurthy (2022). "A novel model to estimate sensible heat fluxes in urban areas using satellite-derived data". <i>Remote Sensing of Environment</i> . DOI: <a href="https://doi.org/j.rse.2021.112880">https://doi.org/j.rse.2021.112880</a> .		

**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.
- V Narinesingh, L Whittaker, **G Rios**, J Jones, TS Stephenson. “Caribbean Heat Extremes: Seasonality, Regional Variation, and Physical Driving Mechanisms”. *AGU Fall Meeting 2024*. 9 Dec 2024. Washington, DC. Poster.
- 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.

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| <b>Service &amp; outreach</b> | 2024        | <b>Student/Early Career Convener</b> , AGU Fall Meeting 2024<br>Co-organized session <i>GC041 - Caribbean Environmental Variability and Change: Current and Impending Risks under Global Warming</i> 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 -      | <b>Co-founder &amp; Director</b> , Caribbeans for Climate<br>501(c)(3) organization with a mission of promoting climate science accessibility to Caribbean stakeholders through education, access, and advocacy.   |
|                               | 2022 -      | <b>Student volunteer</b> , Princeton AOS Outreach & Engagement<br>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.   |
|                               | 2020 - 2023 | <b>Mentor &amp; mentor leader</b> , Harlem Gallery of Science<br>Served as mentor for multiple students from grades 6 to in the New York City area, organized hybrid events and programming for the organization.  |

**Skills**

Programming languages: Python, C++, FORTRAN, R, Julia, Bash, MATLAB, HTML/CSS, JavaScript

HPC tools: OpenMP, MPI, Slurm

Other tools: Git, Jupyter, ANSYS, COMSOL, L<sup>A</sup>T<sub>E</sub>X, Google Cloud Compute Engine, Amazon Web Services

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