

# Avery Barnett

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## Education

### Princeton University, School of Public and International Affairs

Princeton, New Jersey

*Ph.D. Candidate in Public Affairs (Science, Technology, and Environmental Policy)*

**Expected May 2026**

*M.A. in Public Affairs*

**September 2023**

- **Graduate Certificates:** Latin American Studies, McGraw Teaching Transcript
- **Research Interests:** Modeling power systems in Small Island Developing States (SIDS), analyzing grid vulnerability to natural hazards, assessing renewable energy resilience, and facilitating interregional electricity trading
- **Affiliations:** NJEDA Wind Institute Fellow (2023-2024), Macro-Energy Systems Fellow (2023-2024), IRENA Youth Delegate (2023), IRENA Youth Council (2024 - 2026)

### Grinnell College

Grinnell, Iowa

*B.A. in Physics (Honors), Technology Studies and Environmental Studies Concentration*

**May 2021**

- **Awards:** Marie Nesbitt Promise Prize Scholar 2020; Senior Alumni Awardee 2021

## Research & Work Experience

### Offshore Wind Fellow

**August 2023 - August 2024**

*New Jersey Economic Development Authority - Princeton University Fellow*

Princeton, New Jersey

- Chosen as 1 of 4 fellows from Princeton University to do cutting-edge offshore wind research to improve New Jersey's development efforts
- Developed and tested a hurricane model using Julia which tested the electricity grid resilience in the New York and New Jersey region
- Utilized a combination of statistical methods such as Monte Carlo Simulations and Bernoulli trials to simulate outages and analyze the real-life impacts

### Summer Intern for Jamaica (remote)

**Summer 2022**

*Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE)*

Bridgetown, Barbados

- Analyzed, synthesized, and simplified energy-related official documents and news articles to allow for greater regional access to information through the annual Energy Report Cards published by CCREEE
- Liaised with over 15 local companies and organizations affiliated with Jamaica's energy sector to retrieve data related to the renewable energy goals and progress of the island
- Collaborated with Jamaica's Ministry of Science, Energy, and Technology to ensure that the data received was reliable and accurate

### Student Intern (remote)

**Summer 2021**

*Guzman Energy*

Denver, Colorado

- Researched and compiled information regarding pricing, energy mix, and energy capacity about all the electricity markets in the United States
- Designed an energy training manual to detail necessary vocabulary and pertinent processes for new hires

### Research Assistant (remote)

**Summer 2021**

*Clarke Energy Associates*

Saint Thomas, Barbados

- Created detailed ad hoc reports daily in compliance with short deadlines on topics including electric vehicles, desalination, green hydrogen, environmental and social impact assessments, and various renewable technologies
- Conducted intensive, technical, and legal research and document retrieval spanning over 15 different topics in the energy sector to create training documents and bids for consulting projects based in the Caribbean

### CIMES Student Intern (remote)

**Summer 2020, Spring 2021**

*Princeton University, National Oceanic and Atmospheric Administration*

Princeton, New Jersey

- Validated WAVEWATCH III simulations under hurricane conditions focused on shallow and deep water by comparing over 5 versions of model data to observed data via statistical and visual diagrams using Python code
- Awarded a poster award at the 2020 SACNAS conference for presenting innovative methods for comparing wave simulations

## Publications

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- **Barnett, A.,** Bonaldo, L., Schively, G., Luo, Q., Rivera, A., & Jenkins, J. (2025). *Powering Through the Storm: Estimating Electric Grid Resilience Using a Power System Cyclone Impact Model*. Manuscript under review.

## Conference Presentations

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- **Barnett, A.,** Roslansky, O., Goldthree, R., Brecha, R., Oppenheimer, M. (June 2025). *Power Plays: Stakeholder Perspectives and the Geopolitics of an Eastern Caribbean Power Pool*. Paper presented at the Caribbean Studies Association Annual Conference, Simpson Bay, Saint Martin
- **Barnett, A.,** Roslansky, O., Goldthree, R., Brecha, R., Oppenheimer, M. (April 2025). *Power Plays: Stakeholder Perspectives and the Geopolitics of an Eastern Caribbean Power Pool*. Paper presented at the 26th Annual Sir Arthur Lewis Institute of Social and Economic Studies Conference, Five Islands, Antigua and Barbuda
- **Barnett, A.,** Bonaldo, L., Schively, G., Luo, Q., Rivera, A., & Jenkins, J. (December 2024). *Powering Through the Storm: Estimating Electric Grid Resilience Using a Power System Cyclone Impact Model*. Poster presented at the American Geophysical Union Annual Conference, Washington, D.C. [\[link\]](#)
- **Barnett, A.,** Bonaldo, L., Schively, G., Luo, Q., Rivera, A., & Jenkins, J. (October 2024). *Powering Through the Storm: Estimating Electric Grid Resilience Using a Power System Cyclone Impact Model*. Paper presented at the INFORMS Annual Conference, Seattle, Washington.
- **Barnett, A.,** Reichl, B. (October 2020). *Validation of WAVEWATCH III Simulations under Hurricanes in Shallow and Deep Water*. Poster presented and won an award at the Society for Advancement of Chicanos/Hispanics and Native Americans in Science Annual Conference, Virtual

## Public Speaking Engagements

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### Careers in Climate Panelist

**April 2025**

*Center for Careers, Life and Services, Grinnell College*

Grinnell, Iowa

- Invited panelist at Grinnell College to share insights on careers in climate science, graduate school preparation, and the role of a liberal arts education in shaping my professional path

### Media Appearance

**February 2025**

*Bad News Good News*

Princeton, New Jersey

- [Featured](#) in an initiative led by high schoolers aiming to make climate news more accessible and engaging through short film formats

### Media Appearance

**December 2023**

*Brains, Black Holes, and Beyond*

Princeton, New Jersey

- [Featured](#) in an undergraduate student-led podcast to assist listeners in understanding more about offshore wind energy

## Teaching and Mentoring Experience

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### Guest Lecturer

**April 2025**

*Physics and Renewable Technology – Grinnell College*

Grinnell, Iowa

- Conducted a guest lecture on Introduction to Energy Modelling to a university class of ~20 students, illustrating computational considerations in transmission-level electricity systems using real-world research examples
- Designed and facilitated an interactive group activity where students developed their own energy modelling problem statements

### Assistant in Instruction (AI)

**Fall 2023, Fall 2024**

Princeton University - *The Environmental Nexus (ENV210A/B)*

Princeton, New Jersey

- Compiled and synthesized topics into easily digestible material through the use of slideshows and videos
- Moderated roundtable discussions and debates to explore a wide variety of topics and promote critical thinking
- Coordinated and streamlined the grading of writing assignments and exams for 20+ students per semester and ensured that the grades were accurate and fair

## Science Community Leader (SCL)

Grinnell College Physics Department

Spring 2018 - Fall 2019

Grinnell, Iowa

- Assisted with General Physics I & II and Modern Physics coursework over 4 semesters
- Collaborated with the professor to motivate students to understand concepts in a class of approx. 30 students
- Created practice examinations to assess students' understanding and provide additional preparatory materials for their midterm and final examinations
- Conferred with the other teaching assistants to explain concepts to the students and rectify any misinterpretation

## Leadership and Advocacy Experience

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### IRENA Youth Council Member

International Renewable Energy Agency (IRENA)

September 2024 - Present

Abu Dhabi, UAE

- Collaborated within a 13-member council to support the planning and execution of the IRENA Youth Forum, engaging 100+ international youth delegates in global energy and sustainability initiatives
- Spearheaded the design and execution of strategic activities and high-level bilateral meetings to enhance youth engagement and cross-cultural collaboration during the Forum
- Provide ongoing support to global youth energy networks and monitor strategic partnerships to strengthen collaboration and amplify impact across initiatives

### University Administrative Fellow

Princeton University, Office of the Provost

January - July 2024

Princeton, New Jersey

- Collaborated with the Diversity, Equity, and Inclusion office to provide input and guidance on current training material and the development of future programming
- Spearheaded projects to improve student life on campus, highlight underrepresented voices, and promote safe and inclusive spaces

### Policy Trip Leader

Princeton University, School of Public and International Affairs

October 2023 - January 2024

Princeton, New Jersey

- Led a group of 10 graduate students and 1 faculty member on a week-long educational trip to Jamaica to explore environmental and energy policy issues facing the island
- Coordinated over 10 meetings throughout the week with relevant stakeholders across the private and public sector
- Facilitated and arranged cultural exchange opportunities for the participants to understand the historical contexts of the issues being faced

### Macro-Energy Systems Fellow

Macro-Energy Systems Organization (MES)

September 2023 - August 2024

Virtual

- Headed the logistics and organization of the bi-annual MES Workshop at Princeton University, which included lightning talks and poster sessions, as well as keynote speakers, and welcomed around 100 attendees
- Collaborated with a team of professors and fellows from over 4 universities across the contiguous United States to curate a fulfilling agenda
- Delegated responsibilities to 7+ individuals on the team to optimize the execution and efficiency of the event

### Ph.D. DEI Representative

Princeton University, School of Public and International Affairs

October 2021 - December 2022

Princeton, New Jersey

- Collaborated with 10 schoolmates to create a more inclusive and better environment for all students
- Coordinated weekly dinners to foster community and educate students on diversity and inclusion topics
- Participated on a standing committee with faculty and staff to promote diversity and inclusion at all levels and assists in the creation of policies and other action items

## Certifications

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### Italy-IRENA Action for Climate Toolkit (I ACT) Initiative

International Renewable Energy Agency

Spring 2023

Abu Dhabi, UAE

## Skills

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**Software:** Google Earth Pro, Minitab, ArcGIS, QGIS, Microsoft Office Suite: Excel, Word, PowerPoint

**Programming:** Python, Julia, GenX, LaTeX, STATA, HTML, C, CSS, R, and MATLAB

**Languages:** English (Native), Spanish and French (Intermediate Proficiency)