

SUMMARY

Third-year graduate student enrolled in the department of Civil and Environmental Engineering (CEE) at Princeton University, conducting research in the Environmental Fluid Mechanics (EFM) research group. Although my undergraduate studies were in meteorology, my interests have changed from traditional operational forecasting to fluid dynamics and human-environment interactions. As a graduate student, my research interests lie in applying fluid mechanics to the intersection of humans and the environment; more specifically, employing numerical and observational tools to simulate the changing Arctic sea ice surface, ABL, and ocean.

EDUCATION

Princeton University Ph.D. in Environmental Engineering – Advisor: Elie Bou-Zeid	Princeton, NJ 2018–Current
Rutgers University B.S. in Meteorology, <i>summa cum laude</i> – Advisor: Mark Miller – Minors in Mathematics and Environmental Sciences	New Brunswick, NJ 2014–2018

RESEARCH EXPERIENCE

Nonlinearity of Air-Ice-Water Exchanges: Simulations of Remotely-Sensed Surface States <i>Poster Presentation at the Annual AGU Conference</i>	San Francisco, CA 2019
Modeling of Air-Sea-Ice Coupling of the Arctic Atmospheric Boundary Layer <i>Poster Presentation for CEE 509: Directed Research</i>	Princeton, NJ 2019
Drizzle Evaporation in the Stratocumulus-Topped Marine Boundary Layer and its Relationship with Sub-Cloud Turbulence <i>Oral Presentation for George H. Cook Honors Project</i>	New Brunswick, NJ 2018
Seasonal Trends in Extreme Minimum Temperatures at Six New Jersey Locations <i>Poster Presentation at Rutgers Climate Symposium</i>	Piscataway, NJ 2017

TEACHING

- **Assistant in Instruction** at Princeton University
The Climatological, Hydrological, & Environmental Footprints of Cities (CEE 474)
Fall 2020
- **Assistant in Instruction** at Princeton University
Environmental Fluid Mechanics (CEE 305)
Fall 2019

SCHOLARSHIPS AND AWARDS

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| • Gordon S. Wu Scholarship | 2018–2020 |
| • SEBS Dean's List | 2014–2018 |
| • Meteorology Student of the Year | 2018 |

PROJECTS

More details of projects on github.com/josephfogarty

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| • IceSUBS (Python, 2019) | • Forecast Verification (Python/Jupyter, 2017) |
| • Ice SURface energy Budget Solver | • Notebook to explore forecast verification techniques |

PROFESSIONAL EXPERIENCE

Office of the New Jersey State Climatologist	Piscataway, NJ
<i>Undergraduate Intern</i>	2017–2018

- Regular quality control for CoCoRaHS
- Synthesized national snow data for the 2016 Annual Snow Report
- Conducted independent research projects under the advice of the State Climatologist, including precipitation and extreme temperature analysis

Rutgers Environmental Sciences	New Brunswick, NJ
<i>Weather Observer</i>	2016–2018

- Conduct and record daily weather observations few days per week
- Organize other volunteers in the program by creating weekly schedules

Spot-On Weather	Marlboro, NJ
<i>Undergraduate Intern</i>	2016

- Handled operational forecasts for TV and film crews
- Created forensic meteorology reports by using archival data for civil lawsuits

EXTRACURRICULAR

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|---|--------------|
| • American Meteorology Society (AMS) Student Member | 2017–Current |
| • American Geophysical Union (AGU) Student Member | 2019–Current |
| • Rutgers Meteorology Club | 2014 - 2018 |
| <i>Club Treasurer 2016–2017, Club President 2017–2018</i> | |