

Joseph C. Gradone

Rutgers University, New Brunswick, NJ, USA

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EDUCATION

Ph.D. Candidate , Oceanography Rutgers University	2020 - Present
Master of Science , Oceanography University of Delaware	2016 - 2018
Bachelor of Science , Geology, <i>Magna Cum Laude</i> Minors in Atmospheric and Oceanic Studies and Geography University of Colorado	2012 - 2018

PROFESSIONAL EXPERIENCE

National Defense Science and Engineering Graduate Fellow Dept. Marine & Coastal Sciences, Rutgers University	2022 - Present
Field Applications Engineer (Part-time) Teledyne Webb Research	2022 - Present
Graduate Research Assistant Dept. Marine & Coastal Sciences, Rutgers University	2020 - 2022
Customer Support Applications Engineer Teledyne Webb Research, Slocum Glider	2018 - 2020
Graduate Research Assistant School of Marine Science and Policy, University of Delaware	2016 - 2018
Undergraduate Research Assistant Institute for Arctic and Alpine Research, University of Colorado	2015 - 2016
National Science Foundation Research Experiences for Undergraduates Intern Dept. Marine & Coastal Sciences, Rutgers University	2015
Data Assistant National Center for Environ. Info., National Oceanic and Atmospheric Administration	2013 - 2016
Research Intern Stony Brook Millstone Watershed Association	2013 - 2014

RESEARCH INTERESTS

PHYSICAL OCEANOGRAPHY, particularly the large-scale dynamics controlling heat and salt transport in the Atlantic; water mass analysis and transformation processes; ocean-atmosphere teleconnections and feedbacks; development of advanced ocean observing methods, specifically autonomous underwater vehicles.

PEER-REVIEWED PUBLICATIONS

- [2] **Gradone, J. C.**, Wilson, W. D., Glenn, S. M., & Miles, T. N. (2023). Upper ocean transport in the Anegada Passage from multi-year glider surveys. *Journal of Geophysical Research: Oceans*, 128, e2022JC019608. <https://doi.org/10.1029/2022JC019608>
- [1] **Gradone, J. C.**, Oliver, M. J., Davies, A.R., Moffat, C., & Irwin, A. (2020). Sea Surface Kinetic Energy as a Proxy for Phytoplankton Light Limitation in the Summer Pelagic Southern Ocean. *Journal of Geophysical Research: Oceans*, 125. doi: 10.1029/2019JC015646

OTHER PUBLICATIONS

- [5] Engdahl, J., **Gradone, J.C.**, Silva, Z., Aragon, D., Shivakumar, N., and Miles, T. (2023). Implementation of Near Real Time Onboard Processing Software for a Slocum Glider Acoustic Doppler Current Profiler. *OCEANS 2023 – MTS/IEEE U.S. Gulf Coast*, Biloxi, MS, USA, 2023, pp. 1-5, doi: 10.23919/OCEANS52994.2023.10337179.

- [4] **Gradone, J.** & Miles, T. (2022). JGradone/Slocum-AD2CP: v1.0.0 (Version v1.0.0). Zenodo. <https://doi.org/10.5281/zenodo.7416126>
- [3] **Gradone, J.C.**, Hunter, E.J., Mullison, J, & Miles, T.N. (2021) Development of Onboard Processing Capabilities for a Slocum Glider Acoustic Doppler Current Profiler. OCEANS 2021: San Diego – Porto pp. 1-5, doi: 10.23919/OCEANS44145.2021.9705895
- [2] Eichhorn, M., Shardt, Y.A.W., **Gradone, J.C.**, Allsup, B. (2020). Sensitivity Analysis of Bias in Satellite Sea Surface Temperature Measurements. IFAC-Papers OnLine 53, 764–771. doi:10.1016/j.ifacol.2020.12.828
- [1] **Gradone, J.C.**, Roarty, H.J., Evans, C., Glenn, S., Handel, E., Baskin, C., Dusek, G., & Paternostro, C. (2015) Assessing HF Radar Data in New York Harbor: Comparisons with Wind, Stream Gauge and Ocean Model Data Sources. OCEANS 2015, MTS/IEEE Washington, Washington, DC. pp. 1-8. doi: 10.23919/OCEANS.2015.7401972

HONORS AND AWARDS

TOTAL: \$460,450

National Defense Science and Engineering Graduate Fellowship , Rutgers University, \$127,400	2022-2025
Climate and Energy Institute Student Support Fund , Rutgers University, \$500	2024
Voice of the Ocean Making Waves Travel Grant , Rutgers University, \$2,000	2024
G. Unger Vetlesen Foundation (co-PI), Rutgers University, \$250,000	2024
National Science Foundation SCAR-POLAR Conference Travel Grant , University of Delaware, \$1,350	2018
Graduate and Professional Education Professional Development Grant , University of Delaware, \$500	2018
School of Marine Science and Policy Graduate Student Travel Grant , University of Delaware, \$400	2018
Charles and Patricia Robertson Fellowship , University of Delaware, \$26,000	2017—2018
Marian R. Okie Fellowship , University of Delaware, \$26,000	2016—2017
3rd Place Pitch-90 Competition , University of Delaware, \$100	2017
Undergraduate Research Opportunities Program Grant , University of Colorado, \$1,200	2016
National Science Foundation Research Experiences for Undergraduates , Rutgers University, \$5,000	2015
Chancellor's Achievement Scholarship , University of Colorado, \$20,000	2012-2016

TEACHING EXPERIENCE

Integrated Ocean Observing I Teaching Assistant, Rutgers University	Fall 2023
Field Lab Methods I Co-Instructor, Rutgers University	2023-2024
Ocean Methods and Data Analysis Teaching Assistant, Rutgers University	Spring 2023

INVITED TALKS

National Academies of Sciences, Engineering, and Medicine Understanding Gulf Ocean Systems Seminar	May 2024
“Exploratory Glider Deployments Reveal Changes in the Upper Oceanic Water Masses of the Caribbean Through-Flow”	
New Jersey Academic Alliance for Offshore Wind Energy (A2OSW) Symposium	Jan. 2024
“Marine Technology Society New Jersey Student Section”	
Massachusetts Institute of Technology Lincoln Lab	Oct. 2023
“Novel Observations of the Caribbean Through-Flow Enabled by an Expansion of Autonomous Underwater Vehicle Capabilities”	
Agoa Marine Mammal Sanctuary	Oct. 2022
“Autonomous Underwater Vehicle Observations of the Caribbean Through-Flow”	
Underwater Glider User Group (UG2) Meeting	Sept. 2022
“Slocum Glider ADP Based Observations of Caribbean Through-Flow and Their Implications for Global Climate”	

CONFERENCE PROCEEDINGS

* Indicates mentored undergraduate student

- [18] **Gradone, J.C.**, Miles, T., Glenn, S., & Wilson, D. Observations of Water Mass Properties in the Caribbean Through-Flow and their Implications for the Atlantic Meridional Overturning Circulation. AGU Ocean Sciences Conference: New Orleans, 2024. (Poster Presentation)
- [17] Benz, F., Moffat, C.F., **Gradone, J.C.**, Reiss, C., & X. Wang. Physical and Biological Properties of the Southern Bransfield Front. AGU Ocean Sciences Conference: New Orleans, 2024. (Poster Presentation)
- [16] Engdahl, J., **Gradone, J.C.**, Silva, Z., Aragon, D., Shivakumar, N., and Miles, T. Implementation of Near Real-Time Onboard Processing Software for a Slocum Glider Acoustic Doppler Current Profiler. MTS OCEANS 2023: Gulf Coast, 2023. (Oral Presentation)
- [15] Oliver, M., **Gradone, J.**, Davies, A.R., Moffat, C., & Irwin, A. Sea Surface Kinetic Energy as a Proxy for Phytoplankton Light Limitation in the Summer Pelagic Southern Ocean. Southern Ocean Observing System (SOOS) Symposium, 2023. (Poster Presentation)
- [14] **Gradone, J.**, Miles, T., Glenn, S., & Wilson, D. Upper Ocean Transport in the Anegada Passage from Multi-Year Glider Surveys. CLIVAR Workshop on Meeting AMOC Observation Needs in a Changing Climate, 2023. (Poster Presentation)
- [13] Benz, F., Moffat, C., **Gradone, J.**, Reiss, C., & Wang, X. Physical Properties of the Southern Bransfield Front. Gordon Research Conference: Coastal Ocean Dynamics, 2023. (Poster Presentation)
- [12] **Gradone, J.**, Miles, T., Glenn, S., & Wilson, D. Searching for Pathways of Cross-Equatorial Water Mass Transport in the Eastern Caribbean. ASLO Ocean Sciences Meeting, 2023. (Poster Presentation)
- [11] *Sivakumar, N, Miles, T., & **Gradone, J.** It’s Alive!: Automated Glider ADCP Data Processing. ASLO Ocean Sciences Meeting, 2023. (Poster Presentation)
- [10] *Haque, T, Kohut, J., Veatch, J., & **Gradone, J.** Palmer Deep: Moor than Meets the Eye. ASLO Ocean Sciences Meeting, 2023. (Poster Presentation)
- [9] **Gradone, J.C.**, Miles, T., Glenn, S., & Wilson, D. Observing Essential Ocean Features in the Eastern Caribbean for a Safe and Predicted Ocean. ASLO Ocean Sciences Meeting, 2022. (Oral Presentation)
- [8] Kluge, J., Soloviev, A., Morrison, G., Thompson, T., Allsup, B., **Gradone, J.**, Devine, P., Wood, J., & Thurnherr, A. LADCP Analysis of Data from Slocum G3 Glider in a Western Boundary Current. ASLO Ocean Sciences Meeting, 2022. (Oral Presentation)
- [7] **Gradone, J.C.**, Hunter, E.J., Mullison, J., & Miles, T.N. Development of Onboard Processing Capabilities for a Slocum Glider Acoustic Doppler Current Profiler. MTS OCEANS 2021: San Diego – Porto, 2021. (Oral Presentation)
- [6] Smith, H., Oliver, M. J., Breece, M. W., Haulsee, D. E., **Gradone, J.C.**, Goodrich, C., & Hudson, K. Comparing Satellite and AUV: Observations of chlorophyll and sea surface temperature. Delaware Environmental Institute Research Symposium, 2019 (Poster Presentation)
- [5] **Gradone, J.C.**, Oliver, M.J., & Davies, A.R. Low Mesoscale Kinetic Energy as a Precondition for Phytoplankton Blooms in the Southern Ocean. Scientific Committee on Antarctic Research POLAR 2018. Davos, Switzerland,

June 21, 2018 (Poster Presentation)

- [4] **Gradone, J.C.**, Oliver, M.J., & Davies, A.R. Low Mesoscale Kinetic Energy as a Precondition for Phytoplankton Blooms in the Southern Ocean. NASA Biodiversity and Ecological Forecasting Meeting, 2018 (Poster Presentation)
- [3] *Smith, H., Oliver, M. J., Breece, M. W., Haulsee, D. E., **Gradone, J.C.**, & Goodrich, C., Hudson, K. Comparing Satellite and AUV: Observations of chlorophyll and sea surface temperature. University of Delaware REU Presentation, 2017. (Poster Presentation)
- [2] **Gradone, J.C.**, & Lovenduski, N. Surface Chlorophyll Variability in the Drake Passage Region of the Southern Ocean. Earth System and Space Science Conference, University of Colorado, 2015. (Poster Presentation)
- [1] **Gradone, J.C.** & Roarty, H.J. Assessing HF Radar Data in the New York Harbor: Comparisons with Oceanographic Models and Data Sources. Rutgers University REU Presentation, 2015. (Poster Presentation)

FIELD EXPERIENCE

TOTAL: >382 DAYS

Slocum glider deployment, recovery, and piloting Rutgers University (>150 days)	2020 - Present
R/V Nathaniel B. Palmer West Antarctic Peninsula (6 weeks)	2021
Slocum glider deployment, recovery, and piloting Teledyne Webb Research (>150 days)	2018 - 2020
Slocum glider deployment, recovery, and piloting University of Delaware (>30 days)	2016 - 2018
High Frequency Radar installation and maintenance Rutgers University (>10 days)	2015

SERVICE

Manuscript Reviewer: International Council for the Exploration of the Sea (ICES) Journal of Marine Science

Academic and Professional Service:

Steering Committee , U.S. Underwater Glider User Group	2023 - Present
Chair , Marine Technology Society New Jersey Student Section	2022 - Present
Treasurer , Oceanography Graduate Student Association, Rutgers University	2022 - 2023
Intern Coordinator , NSF Research Experiences for Undergraduates, Rutgers University	2021 - 2022
Co-Chair , Graduate Student Association, University of Delaware, College of Earth, Ocean, and Environment	2017 - 2018

Conference Convener:

Marine Technology Society New Jersey Student Section Research Symposium , >40 participants \$1,500 in supported funds	2024
Marine Technology Society New Jersey Student Section Research Symposium , >25 participants \$800 in supported funds	2023
University of Delaware College of Earth, Ocean, and Environment Graduate Research Symposium >\$4,000 in supported funds	2017

Recent Outreach and Broader Impacts:

Rutgers' Day , Presenter	2022 - Present
Underwater Glider User Group Early Career Panel , Organizer	2024
Somerset County 4-H Career Fair , Presenter	2023
Rutgers University Department of Marine and Coastal Sciences , Undergraduate Mentor	2022 - 2023
4-H STEM Challenge Explorers of the Deep , Scientific Contributor	2022
New Jersey State Library Oceans' of Possibilities Reading Program , Presenter	2022
University of Delaware Coast Day , Presenter	2016 - 2018
Boy Scouts of America Oceanography Merit Badge , Presenter	2017
United State Naval Academy , Presenter	2017

WORKSHOPS AND TRAININGS

National Center for Atmospheric Research, Community Earth System Model Tutorial (Selected)	2021
National Center for Atmospheric Research, Weather Research and Forecasting Tutorial (Selected)	2021
Teledyne Gavia Training Course	2019
Rutgers University Glider Training Course	2017

PROFESSIONAL SOCIETIES

The Oceanography Society , Member	2021 - Present
Underwater Glider User Group , Member	2020 - Present
Marine Technology Society , Member	2017 - Present

MEDIA

- 1/17/24 – Rutgers SEBS and NJAES [“RUCOOL Awarded Gift to Enhance Global Exploration in the Caribbean Sea”](#)
- 4/21/23 – Marine Technology Society [“New Jersey Hosts Their First Annual Marine Technology Society Student Section Research Symposium”](#)
- 10/5/22 – Agoa Marine Mammal Sanctuary ["A scientific machine surveys the Caribbean waters"](#)
- 4/21/21 – Business Wire ["Atlantic Shores Offshore Wind Launches Buoys to Collect Essential Atmospheric, Cold Pool, Animal Migration Data"](#)
- 4/5/21 – Teledyne Marine ["Slocum Glider “Silbo” Circumnavigates the Atlantic Ocean – Part 3"](#)
- 1/24/18 – Delaware EPSCoR ["3rd Place, University of Delaware, 2017 Pitch-90 Competition, University of Delaware"](#)