Jacquelyn Veatch

**EDUCATION**

**Doctor of Philosophy**, Physical Oceanography 2019-2024

Rutgers University, Department of Marine and Coastal Science

*Physical Drivers of Food Web Focusing*, Advisor: Dr. Josh Kohut

**Bachelor of Science**, Biophysics 2015-2019

The George Washington University

University Honors Program

**PROFESSIONAL EXPERIENCE**

**NSF OCE Postdoctoral Research Fellow** Nov 2024-2026

Woods Hole Oceanographic Institute, Department of Applied Ocean Physics & Engineering

**Graduate Assistant**  2019-2024

Rutgers University, Department of Marine and Coastal Science

**Undergraduate Research Assistant** 2017-2019

Department of Biology, The George Washington University

**Wilderness Counselor** 2017, 2019

Moose River Outpost, Wilderness Intensive Leadership Development

**Undergraduate Research Assistant** 2015-2017

Department of Microbiology, Immunology & Tropical Medicine, The George Washington University

**PUBLICATIONS**

**Veatch, J**., Oliver, M., Fredj, E., Statscewich, H., Bernard, K., Hann, A., Voirol, G., Fuchs, H., Fraser, W., Kohut, K., 2024, *Lagrangian coherent structures influence spatially dependent marine food webs* (in revision at Communications Earth & Environment)

Darren C. McKee, Jacquelyn M. Veatch, Maria T. Kavanaugh, Josh T. Kohut, Scott C. Doney, 2024 *Disentangling*

*advection and Lagrangian evolution of surface chlorophyll in a nearshore submarine canyon using remote sensing and high-frequency radar* (submitted to Journal of Geophyscial Research)

**Veatch, J**., Kohut, J., Oliver, M., Statscewich, H., Fredj, E., 2024, *Quantifying the role of sub-mesoscale lagrangian transport features in the concentration of plankton in a coastal system* ICES Journal of Marine Science, 2024, Vol. 0, Issue 0, 1-14 doi: 10.1093/icesjms/fsae036

De la Reguera, E., **Veatch, J**., Gedan, K., Tully, K.L., 2020, *The effects of saltwater intrusion on germination success of standar and alternative crops.* Environmental and experimental botany. doi: 10.1016/j.envexpbot.2020.104254

Roarty H., Kohut, J., Stolarz, T., Smith, M., **Veatch, J**., Handel, E., Glenn, Scott., 2024 "The History of Oceanographic High Frequency Radar at Rutgers University," 2024 IEEE Radar Conference (RadarConf24), Denver, CO, USA, 2024, pp. 1-6, doi: 10.1109/RadarConf2458775.2024.10548298.

**Veatch, J**., Kohut, J., Fredj, E., Oliver,M. 2023, "High Frequency Radars Observe Krill Feeding: Using Lagrangian Coherent Structures to Detect Food Web Focusing," *In* OCEANS 2023, Gulf Coast, Biloxi, MS, USA, 2023, pp. 1-4 doi: 10.23919/OCEANS52994.2023.10337046.

**Veatch, J**., Fredj, E., and Kohut, J. 2022, "High Frequency Radars as Ecological Sensors: Using Lagrangian Coherent Structures to Quantify Prey Concentrating Features," *In* OCEANS 2022, Hampton Roads, Hampton Roads, VA, USA, 2022, pp. 1-7 doi: 10.1109/OCEANS47191.2022.9977356.

**FIELD AND LAB EXPERIENCE**

**UNOLS Early Career Chief Scientist Training Program**

Arctic Expedition onboard the USCGC Healy October 2024

* Planned and executed a 10-day cruise in the Chukchi Sea with an interdisciplinary team of early career scientists
* Took leadership on coordinating a transect through a previously unmapped canyon on the Chukchi shelf break, including CTD rosette casts, plankton nets, multicores, and multibeam mapping

**Rutgers Department of Marine and Coastal Science, Center for Ocean Observing Leadership**

Team SWARM Antarctic Field Season, Lawrence M. Gould Research Vessel February 2023-March 2023

* Retrieved three High Frequency Radars and Remote Power Modules using coordinated land, small boat, and vessel operations

Glider Operations in Martinique November 2022

* Serviced and deployed glider monitoring inflow to the Caribbean Sea and contributions to AMOC

Horseshoe Crab Survey in the Delaware Bay July 2022

* Collected Horseshoe Crab egg samples during nighttime surveys to monitor prey availability for migratory birds

Microplastics in the Delaware Bay May 2022

* Collected zooplankton samples through strategic net tows, collected fecal pellets for plastic detection
* Adapted sample plan based on real-time data from hydrographic surveys

Team SWARM Antarctic Field Season, Palmer Station February 2020-March 2020

* Installed, collected, and analyzed data from three High Frequency Radars
* Deployed, maintained, and analyzed data from three Slocum Gliders
* Collected and analyzed data from small boat surveys using towed ACROBAT, EK-80, and net tows

Palmer Long Term Ecological Research, Lawrence M. Gould Research Vessel January 2020-February 2020

* Analyzed samples collected from CTD Rosette using filters, Imaging Flow Cytobot, and FIRe

**Senior Capstone Project, George Washington University** May 2018-May 2019

*Effects of Osmotic Potential and Ionic Toxicity on Water Uptake Mechanisms in Germination of Crop Seeds*

* Designed and conducted experimentation and data analyses, presented findings for academic audiences

**Biology Department, George Washington University**

Undergraduate Field and Greenhouse ResearchAssistant September 2017-May 2019

**Department of Microbiology, Immunology, and Tropical Medicine, George Washington University**

Cell Culture and Mouse Breeding Assistant September 2015-May 2017

**Cell Signaling Technology, Beverly MA**

Summer Intern, Custom Antibody Production June 2016- September 2016

Summer Intern, Antibody Production and Tissue Culture June 2015- September 2015

**GRANTS AND AWARDS**

Polar Science Early Career Community BAJEDI Micro-grant ($1,000)………………………………………………...2025

NSF Division of Ocean Sciences Postdoctoral Research Fellowship ($417,619)……………………...2024-2026

National Research Council Postdoctoral Award (2 years of support, offered but declined)……………May 2024

Early Career Arctic Chief Scientist Training Cruise Participant……………………………………Summer 2024

Mid-Atlantic Chapter of the American Fisheries Society Student Presentation Competition Winner......Nov 2023

PEO Fellowship, New Jersey National Nomination……………………………………………………April 2023

Rutgers Graduate Student Organization of the Year, Served as President of organization……21-22 & 22-23 AY

OCEANS 2022 Student Poster and Paper Competition, First Place Prize ($3,000 & Travel Scholarship)...Oct 22

Marine Technology Society EMERGE Laureate (Travel Scholarship)…………………..………….October 2022

Rutgers Three Minute Thesis Competition, Third Place………………………………………………March 2022

Ocean Hack Week at Bigelow Laboratory for Ocean Sciences (Travel Scholarship)….…………….August 2021

Peverley Prize in Experimental Physics from the George Washington University……………………..May 2019

George Washington University Research Days Award, Second in Ecology…………………………...April 2019

George Washington Undergraduate Research Experience Award ($500)……………2017-2018 Academic Year

**PUBLIC DATASETS**

Statscewich, H., **Veatch, J**. (2023) Water temperature, salinity, and optical properties from an Acrobat towed vehicle from bi-weekly grids conducted at Palmer Station, Antarctica in 2020. Biological and Chemical Oceanography Data Management Office (BCO-DMO). (Version 1) <http://lod.bco-dmo.org/id/dataset/916046>

**Veatch, J.,** Klinck, J. M., Oliver, M., Statscewich, H., Kohut, J. (2024) Results from Finite Time Lyapunov Exponent calculations using High Frequency Radar observed surface currents around Palmer Deep Canyon from January to March of 2020. Biological and Chemical Oceanography Data Management Office (BCO-DMO). (Version 1) doi:10.26008/1912/bco-dmo.917914.1

**Veatch, J.,** Klinck, J. M., Oliver, M., Statscewich, H., Kohut, J. (2024) High Frequency Radar (HFR) observed surface currents at Palmer Deep Canyon in the coastal ocean west of the Antarctic Peninsula in 2020. Biological and Chemical Oceanography Data Management Office (BCO-DMO). doi:10.26008/1912/bco-dmo.917884.1

**Veatch, J**., Klinck, J. M., Oliver, M., Kohut, J., Statscewich, H. (2024) Relative Particle Density (RPD) calculations using High Frequency Radar (HFR) observed surface currents around Palmer Deep Canyon from January to March of 2020. Biological and Chemical Oceanography Data Management Office (BCO-DMO). (Version 1) doi:10.26008/1912/bco-dmo.917926.1

**RESEARCH PRESENTATIONS**

\*undergraduate student

+invited speaker

++best student presentation/paper award

**Jacquelyn Veatch,** Josh Kohut, Matt Oliver, Katherine Gallagher, Erick Fredj *Finding Marine Grocery Stores: A Lagrangian Approach to Prey Concentrating Features in Palmer Deep, Antarctica* Ocean Sciences Meeting 2024, Oral Presentation February 22nd 2024

**Jacquelyn Veatch++,** Josh Kohut, Matt Oliver, Katherine Gallagher, Erick Fredj *Finding Marine Grocery Stores: A Lagrangian Approach to Prey Concentrating Features in Coastal Biological Hotspot* MACAFS Annual Meeting, Oral Presentation November 16th 2023

**Jacquelyn Veatch**, Josh Kohut, Matt Oliver, Erick Fredj *High Frequency Radars Observe Krill Feeding: Using Lagrangian Coherent Structures to Detect Food Web Focusing,* OCEANS23 Gulf Coast, Marine Life and Ecosystems, Oral Presentation September 26th 2023

**Jacquelyn Veatch**, Josh Kohut, Matt Oliver, Hank Statscewich, Erick Fredj *Quantifying Physical Prey Concentrating Features in Palmer Deep Canyon: Finding Marine Grocery Stores* SOOS Symposium 2023, Distributed research efforts along the West Antarctic Peninsula and Scotia Arc, Oral Presentation August 15th 2023

Fiona Sheard\*, Josh Kohut, **Jacquelyn Veatch** *Choosing Sides: Antarctic Krill Congregating Across the Palmer Deep* Rutgers University Research Experience for Undergraduates Symposium, Poster Presentation August 4th 2023

**Jacquelyn Veatch,** Josh Kohut, Erick Fredj, Matt Oliver*Using Lagrangian Coherent Structures to Quantify Prey Concentrating Features* Aquatic Science Meeting 2023, Lagrangian Transport and Connectivity in Oceanic Flows: Applications to Ocean Dynamics and Marine Ecosystems, Oral Presentation June 5th 2023

Tareen R. Haque\*, Josh Kohut, **Jacquelyn Veatch**, Joe Gradone *Palmer Deep: More than Meets the Eye* Aquatic Science Meeting 2023, Poster Presentation June 8th 2023

**Jacquelyn Veatch+,** Josh Kohut, Erick Fredj, Matt Oliver*Using Lagrangian Coherent Structures to Quantify Prey Concentrating Features* The Second International Conference on Naval Architecture and Ocean Engineering, Virtual Oral Presentation May 28th 2023

**Jacquelyn Veatch,** Josh Kohut, Erick Fredj, Matt Oliver*Finding Marine Grocery Stores: Using Lagrangian Coherent Structures to Quantify Prey Concentrating Features* Rutgers Department of Marine and Coastal Sciences Seminar Series, Oral Presentation November 28th 2022

**Jacquelyn Veatch++,** Erick Fredj, Josh Kohut, *High Frequency Radars as Ecological Sensors: Using Lagrangian Coherent Structures to Quantify Prey Concentrating Features in the Antarctic* OCEANS 22 Hampton Roads, VA Student Post Competition, October 17th 2022

**Jacquelyn Veatch,** Erick Fredj, Josh Kohut*Using Lagrangian Coherent Structures to Quantify Prey Concentrating Features in Coastal Biological Hotspot* Ocean Sciences Meeting 2022, Physical-Biological Interactions Posters 1, March 1st 2022

**Jacquelyn Veatch,** Laura McDonnell,Andrew Chin\*, Felippe Galdino, Kyle Oliveira, Bruna Ramos\*

*Xtractopy: a tool optimizing the use of oceanographic data by marine spatial ecologists* Ocean Hack Week Project Presentation at Bigelow Ocean Laboratories, Aug 6th 2021

**Jacquelyn Veatch** *Physical Drivers of Marine Food Web Focusing* Dissertation Proposal Defense: Rutgers Department of Marine and Coastal Science May 27th 2021

Mollie Passcantando\*, **Jacquelyn Veatch**, Josh Kohut *The Decadal Impact from Suppression of Eddy-Diffusivity on Surface Mixing in the Southern Ocean through ARGO Float Analysis* Rutgers University George H Cook Honors Thesis Seminar, Oral Presentation May 2nd 2021

**Jacquelyn Veatch**, Elizabeth de la Reguera, Keryn Gedan. *Effects of Osmotic Potential and Ionic Toxicity on Water Uptake Mechanisms in Germination of Crop Seeds* Seminar Speaker at: GW Dept. of Physics Senior Capstone Seminar May 8th 2019

**Jacquelyn Veatch**, Elizabeth de la Reguera, Keryn Gedan. *Effects of Osmotic Potential and Ionic Toxicity on Water Uptake Mechanisms in Germination of Crop Seeds* Seminar Speaker at: GW Honors Program Research April 29th 2019

**SCIENCE POLICY**

**Fifth National Climate Assessment,** Technical Contributor Spring 2023

* Synthesized current understanding of ecosystem buffering capacity to create a comprehensive figure

**Rutgers Environmental Governance Interest Group,** Discussion Host April 2021

* Organized and facilitated discussion of most recent IPCC reports amongst graduate students

**Environment America,** Public Lands and Conservation Intern January 2019-May 2019

* Researched for and participated in meetings with congressional offices
* Various other grass-roots efforts to build support for Land and Water Conservation Fund

**TEACHING EXPERIENCE**

**Rutgers Department of Marine and Coastal Science**

How to Build a Habitable Planet Fall 2023

* Developed an upper-level undergraduate course on the scientific story of creation, using past climates to contextualize modern climate change

Ocean Methods and Data Analysis, Teaching Assistant Spring 2022

* Ran laboratory section of course, instructing students through instrument deployments and data analysis
* Developed introductory Python programming lectures and exercises

Introduction to Oceanography, Teaching Assistant Fall 2021

* Engaged non-major undergraduates in a virtual classroom environment

Introduction to Physical Oceanography, Teaching Assistant Fall 2020, Fall 2021

* Ran virtual (2020) and in-person (2021) recitations focused on problem solving, guest lectured

Software Bootcamp (Python), Teaching Assistant August 2020

* Facilitated small group discussions and problem solving amongst students in a virtual environment

**George Washington University Physics Department,** Undergraduate Learning Assistant

Modern Physics Laboratory January 2019-May2019

Electromagnetic Theory ISeptember 2018-December 2018

Intro to Electromagnetism September 2017- May 2018

**PROFESSIONAL ACTIVITIES & PUBLIC OUTREACH**

**Present Reviewer** 2024 - present

Journal of Geophysical Research

Journal of Limnology and Oceanography

Marine Ecological Press Series

**UN Ocean Decade Satellite Activity: “More Seats at the Table” Increasing Representation in Sciences**

* Organizing committee member, early career representative September 2021

**Empowering Early Career Ocean Professionals**

* Early Career Ocean Professionals (ECOP) Breakfast, OCEANS23 conference September 2023
  + Worked with Marine Technology Society and IEEE Ocean Engineering Society leadership to plan a listening session with ECOPs, discussing what they need from professional societies
* Career Networking Fair, Student Tour Guide Lead, OCEANS23 conference September 2023
  + Lead a group of volunteer tour guides in facilitating student group experiences at the OCEANS23 career networking fair
* Rutgers Marine Science Undergraduate Student Mentor Program September 2021- present
* New Jersey Marine Technology Society Student Symposium, organizer and presenter May 2022
* Research Internships in Ocean Science, Graduate Student Mentor June 2022-August 2022
  + Guided twelve undergraduates through their summer research projects
  + Ran weekly workshops on data analysis, science communication, and career development

**Connecting with Adult and High School Learners to Discuss Ocean Science Topics and Careers**

* Rutgers Day, Lead Organizer April 2022, 2023, 2024
  + Coordinated five interactive marine science exhibits staffed with Rutgers graduate students, engaging thousands of visitors of all ages from the local New Brunswick community
* High School Science Talk Tour, *The Antarctic Food Web* September 2021-2023
  + Presented at 8 middle and high school science classrooms exposing students to careers and current research in marine science, relating their current curriculum directly to Antarctic marine research
* Ocean Shore Bowl for High School Students, Volunteer Room Lead March 2021, 2022
* New Jersey Coastal Flyrodders, Guest Speaker, *Fish in Coastal Flows* September 2020
* *SPS Observer* alumni spotlight and cover story, *Physics and a Climate Crisis* Spring 2020

**Engaging Women and other Underrepresented Groups in Science**

* Rutgers Education Opportunity Fund, Calculus Tutor September-December 2022
* *Ocean of Possibilities*, interactive learning at NJ public libraries May2022-Aug2023
* Retention Outreach and Accessibility in Marine Science, Founding Member May2021-present
* Intrepid Museum’s GOALS for Girls Summer Program, Earth and Marine Science Mentor August 2020
* Life Pieces to Masterpieces, Friday Volunteer Instructor, *Physics is Everywhere* 2017-2019

**Professional Memberships**

IEE Ocean Engineering Society, Young Professionals Committee 2023-present

Marine Technology Society, Education Committee 2019-present

Association for the Scientists of Limnology and Oceanography 2022-present

**LEADERSHIP**

**Oceanography Graduate Student Association**

President……………………………………………………………………………………May2021-2024

Treasurer……………………..…………………………………………….................May 2020-May2021

Department Seminar Committee……………………………………………………...May 2020-May2021

**Rutgers Go Outdoors**

Outdoor Adventure Senior Facilitator. ……………………………………………..September 2019-2024

**CERTIFICATIONS**

Wilderness First Responder, Wilderness Medical Associates

CPR, Red Cross