Alexandra E. Jones-Kellett, Ph.D.
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RESEARCH INTERESTS

biophysical interactions · plankton ecology · mesoscale currents
computational oceanography · Lagrangian methods

EDUCATION

2024 **Ph.D., Biological Oceanography**, MIT-WHOI Joint Program in Oceanography
Massachusetts Institute of Technology, Dept. Earth, Atmospheric, & Planetary Sciences
Woods Hole Oceanographic Institution, Biology Dept.
Thesis: A Lagrangian perspective of mesoscale biophysical interactions in the subtropical ocean
Committee: Drs. Michael J. Follows (Advisor; MIT), Stephanie Dutkiewicz (MIT), Amala Mahadevan (WHOI), Colleen Mouw (URI)

2018 **B.A., Mathematics, Physics & Business Minors**, University Honors Program
Temple University, College of Science & Technology
Thesis: Impact of Warm Water Anomalies on Phytoplankton Composition in the Santa Barbara Channel (dx.doi.org/10.34944/dspace/4610)
Committee: Drs. Raphael Kudela (UCSC) & Eric Cordes (TU)

RESEARCH POSITIONS

2024 – **Postdoctoral Associate,** Follows Marine Biogeochemical Modeling Group
Massachusetts Institute of Technology, Dept. Earth, Atmospheric, & Planetary Sciences (EAPS)

2019 – 2024 **Graduate Research Assistant,** Follows Marine Biogeochemical Modeling Group
Massachusetts Institute of Technology, EAPS

2022 **Visiting Graduate Research Assistant**, Fuhrman Marine Microbial Ecology Group
University of Southern California, Dept. Biological Sciences

2019 **Visiting Graduate Research Assistant**, Sosik Optical Ocean & Phytoplankton Ecology Lab
Woods Hole Oceanographic Institution, Biology Dept.

2018 – 2019 **Research Assistant**, Kulathinal Evolutionary Genomics & Biological Informatics Lab
Temple University, Dept. of Biology

2018 **Project Lead**, NASA DEVELOP National Program
NASA Jet Propulsion Laboratory, Earth Science Division

2015 – 2018 **Undergraduate Researcher**, Kulathinal Evolutionary Genomics & Biological Informatics Lab
Temple University, Dept. of Biology

2017 **Intern**, NASA Student Airborne Research Program
NASA Armstrong Flight Research Center & *University of California Irvine*

MANUSCRIPT PUBLICATIONS (⁺equal contribution, *student mentee)

Peer Reviewed

2. Jones-Kellett AE, McNichol JC, Raut Y, Cain KR, Ribalet F, Armbrust EV, Follows MJ, Fuhrman JA (2024). Amplicon sequencing with internal standards yields accurate picocyanobacteria cell abundances as validated with flow cytometry. **ISME Communications**, 4(1): ycae115. doi.org/10.1093/ismeco/ycae115
1. Jones-Kellett AE & Follows MJ (2024). A Lagrangian Coherent Eddy Atlas for Biogeochemical Applications in the North Pacific Subtropical Gyre. **Earth System Science Data**, 16, 1475-1501. doi.org/10.5194/essd-16-1475-2024

Submitted / Under Review

2. Jones-Kellett AE & Follows MJ. The satellite chlorophyll signature of Lagrangian eddy trapping varies regionally and seasonally within a subtropical gyre. *Under Review with* **Ocean Science**. Preprint: doi.org/10.5194/egusphere-2024-3211
1. Koestner D, Clayton S, Lerner P, Jones-Kellett AE, Walker SL. Biogeochemical-Argo floats reveal seasonality of the biological carbon pump influenced by the Lofoten Basin Eddy. *Under Review with* **Geophysical Research Letters**.

In Preparation

3. Cornec M[+], Jones-Kellett AE[+], Lang S[+], Masud-Ul-Alam M[+], Puppa Kocsis V[+], Snow T[+]. A time series of a Gulf Stream cyclonic eddy from NASA PACE, SWOT, and BGC-Argo observations. *In preparation.*
2. Jones-Kellett AE, McNichol JC, Raut Y, Fuhrman JA, Follows MJ. Lagrangian histories explain mesoscale phytoplankton variability in the North Pacific Subtropical Gyre. *In preparation.*
1. Jones-Kellett AE[+], Padalino C[+]*, Britten G, Follows MJ. The effect of eddies on pCO_2 across the global ocean. *In preparation*.

DATASETS AND SOFTWARE ([+]equal contribution)

4. Jones-Kellett AE (2024). North Pacific Subtropical Gyre RCLV Atlas (Version 2). Dataset on **Zenodo**. doi.org/10.5281/zenodo.10849221
3. Jones-Kellett AE[+], McNichol JC[+], Raut Y, Fuhrman JA, Follows MJ (2024). Universal Amplicon Sequences (mixed 16S/18S) from SCOPE Gradients 4 Cruise. Dataset on **NCBI BioProject**. ncbi.nlm.nih.gov/bioproject/1079727
2. Jones-Kellett AE (2023). North Pacific Subtropical Gyre RCLV Atlas (Version 1). Dataset on **Zenodo**. doi.org/10.5281/zenodo.8139149
1. Jones-Kellett AE (2023). RCLVAtlas. Software on **Github**. doi.org/10.5281/zenodo.7702978

MENTORING AND ADVISING

Primary Advisor

2024	Khyatee Atolia (Wellesley College), MIT Undergraduate Research Opportunities Program Project: Which satellite products best capture ocean currents in the North Pacific?
2021	Sydney Kim (Dept. Mech. Engineering), MIT Undergraduate Research Opportunities Program Project: How do Eddies Modify the Ocean's Uptake of CO_2?

Co-Advisor

2022 – 2023	Christine Padalino, MIT EAPS Master of Science Program Thesis: The effect of eddies on fCO_2 in the North Pacific surface ocean

Mentor

2023 – 2024	Lucy Brock (Undergraduate Student), MIT EAPS Peer Mentor Program
2021 – 2023	Lucy Sandoe (Master's Student), MIT EAPS Peer Mentor Program
2021 – 2022	Kelly McKeon (Ph.D. Student), MIT EAPS Peer Mentor Program
2020, 2021	Prospective Ph.D. Students, MIT EAPS Application Mentorship Program
2019	Prospective Ph.D. Students, MIT-WHOI Joint Program Application Support & Knowledgebase

TEACHING

Apr 26, 2023	**Guest Lecturer** for Introduction to Oceanography *Case Western Reserve University*, Dept. Earth, Env., & Planetary Sciences
2022	**Teaching Assistant** for Mechanisms and Models of the Global Carbon Cycle *Massachusetts Institute of Technology*, Dept. Earth, Atmospheric, & Planetary Sciences

HONORS AND AWARDS

2024	MIT EAPS Community Builder Award
2023	Temple University 30 Under 30
2022	FilaChange Student Travel Grant (~$1,000)
2019	MIT EAPS John H. Carlson Fellowship (~$84,000)
2019	NSF Graduate Research Fellowship Program, Honorable Mention
2018	Ocean Sciences Meeting Student Travel Grant ($500)
2017	Temple University Diamond Award
2017	Temple University Creative Arts Research and Scholarship Grant ($4,000)
2016, 2017	David Tepper, CST '64 and Elaine Kowalewski Scholarship in Mathematics ($3,000)
2016	Temple University Merit Scholarship Educational Enhancement Stipend ($4,000)
2016	White Haven Lions Club Scholarship ($500)
2014	Temple University Merit Scholarship

OCEANOGRAPHIC CRUISES

Nov 18 – Dec 15, 2021	R/V Thomas G. Thompson, SCOPE-Gradients 4, North Pacific
Sep 20 – 22, 2019	R/V Neil Armstrong, MIT-WHOI Joint Program Cruise, Northeast US Atlantic Shelf
Jun 28 – Jul 7, 2019	SS/V Corwith Cramer, MIT-WHOI Joint Program Cruise, Northeast US Atlantic Shelf

INVITED PRESENTATIONS

Jun 24, 2024	NASA Goddard Ocean Ecology Lab, MPOWIR NASA Speaker Series
Mar 11, 2024	Simon's Collaboration on Ocean Processes and Ecology (SCOPE) , Gradients series
Nov 15, 2023	Simon's Collaboration on Computational Biogeochemical Modeling of Marine Ecosystems (CBIOMES)
Oct 10, 2023	Mahadevan Group Meeting, Dept. of Physics, WHOI
Oct 2, 2023	SCOPE, Gradients series
Sep 14, 2022	Simon's CBIOMES

FIRST AUTHOR CONFERENCE PRESENTATIONS ([+]equal contribution)

18. Jones-Kellett AE, McNichol JC, Raut Y, Fuhrman JA, Follows MJ (Feb 21, 2024). The Fluid Dynamical Structuring of Microbial Communities Along an Eastern North Pacific Transect. Poster. **Ocean Sciences Meeting**. New Orleans, LA, USA.
17. Jones-Kellett AE & Follows MJ (Nov 10, 2023). The Lagrangian History of the Biologically Anomalous Cyclone Cathy (Station 4) from the Gradients 4 Cruise. Poster. **SCOPE Annual Meeting**. New York, NY, USA.
16. Jones AE & Follows MJ (Jun 5, 2023). Enhanced Biological Activity in Lagrangian Coherent Eddies of the North Pacific Subtropical Gyre. Oral. **Aquatic Sciences Meeting**. Palma de Mallorca, Spain.
15. Jones AE & Follows MJ (Aug 31, 2022). Satellite Chlorophyll Signatures of Eddy Coherency in the North Pacific Subtropical Gyre. Oral. **FilaChange**. Providence, RI, USA.
14. Jones AE & Follows MJ (Mar 4, 2022). Does coherency shape the chlorophyll signature of North Pacific subtropical gyre eddies? Oral. **Ocean Sciences Meeting**. Virtual.
13. Jones AE & Follows MJ (Jan 25, 2022). Does eddy coherency affect plankton populations in the NPSG? Oral. **SCOPE Annual Meeting**. Virtual.
12. Jones A[+], Knapp H[+], Peacock A[+], Wakamatsu L[+], Holt B (Dec 10, 2018). Predicting Grunion Migration Patterns and Spawning Areas in Response to Changes in California's Oceans by Coupling Satellite and In Situ Data. Poster. **American Geophysical Union Fall Meeting**. Washington, DC, USA.
11. Jones A[+], Knapp H[+], Peacock A[+], Wakamatsu L[+], Holt B (Aug 1, 2018). Predicting Grunion Migration Patterns and Spawning Areas in Response to Changes in California's Oceans. Poster. **NASA Annual Earth Science Application Showcase**. Washington, DC, USA.
10. Jones AE, Ranz JM, Kulathinal RJ (Apr 12 & 14, 2018). Evolution of de novo genes in the Drosophila melanogaster lineage. Poster. **59th Annual Drosophila Research Conference**. Philadelphia, PA, USA.

9. Jones AE, Ranz JM, Kulathinal RJ (Apr 12, 2018). Evolution of de novo genes in the Drosophila melanogaster lineage. Poster. **Temple Undergraduate Research Forum and Creative Works Symposium**. Philadelphia, PA, USA.
8. Jones AE, Houskeeper HF, Kudela RM (Feb 15, 2018). Impact on phytoplankton composition in the Santa Barbara Channel from the 2013-2015 warm water anomaly. Poster & lightning talk. **Ocean Sciences Meeting**. Portland, OR, USA.
7. Jones AE, Ranz JM, Kulathinal RJ (Jan 20, 2018). Evolution of de novo genes in the Drosophila melanogaster lineage. Poster. **Harvard National Collegiate Research Conference**. Cambridge, MA, USA.
6. Jones AE, Houskeeper HF, Kudela RM (Oct 6, 2017). Warm water anomaly effect on Santa Barbara Channel phytoplankton composition. Poster. **College of Science and Technology 8th Annual Temple Undergraduate Research Symposium**. Philadelphia, PA, USA.
5. Jones AE, Houskeeper HF, Kudela RM (Aug 8, 2017). Effect of changing sea surface temperature on phytoplankton composition in the Santa Barbara Channel. Oral. **NASA Student Airborne Research Program Meeting**. Irvine, CA, USA.
4. Jones AE, Stanley CE, Kulathinal RJ (Apr 20, 2017). A dynamic and adaptive male genomic landscape in Drosophila. Oral. **Temple Undergraduate Research Forum and Creative Works Symposium**. Philadelphia, PA, USA.
3. Jones AE, Stanley CE, Kulathinal RJ (Apr 1, 2017). Functional genomic landscape in Drosophila provides evidence for pervasive adaptation of sexually selected male traits. Oral. **93rd Annual Meeting of the Pennsylvania Academy of Science**. Wilkes Barre, PA, USA.
2. Jones AE, Chin JL, Stanley CE, Kulathinal RJ (Sep 16, 2016). Adaptive functional landscape of reproductive genes in Drosophila provides evidence for positive selection on sperm-specific proteins. Poster. **College of Science and Technology 7th Annual Temple Undergraduate Research Symposium**. Philadelphia, PA, USA.
1. Jones AE, JL Chin, NH Rigby, CE Stanley, RJ Kulathinal (Jul 29, 2016). Functional landscape of locally adaptive reproductive proteins in Drosophila melanogaster. Poster. **Temple University Biology Department Summer Undergraduate Research Program and MARC Program Poster Session**. Philadelphia, PA, USA.

DEPARTMENT SEMINARS

Nov 16, 2023	Biology Dept. Seminar, WHOI
Oct 19, 2023	Student Seminar, MIT EAPS
Aug 8, 2023	Afternoon Talk Series, MIT EAPS
Apr 14, 2023	Student Seminar, Program in Oceans, Atmosphere, & Climate, MIT EAPS
Oct 7, 2022	Student Seminar, Program in Oceans, Atmosphere, & Climate, MIT EAPS
Oct 26, 2021	Student Seminar, Program in Oceans, Atmosphere, & Climate, MIT EAPS
Apr 29, 2021	Biology Dept. Seminar, WHOI

WORKSHOP PARTICIPATION

2024	NASA and OCB PACE Hackweek, University of Maryland Baltimore County, Baltimore, MD
2024	Simons CBIOMES Workshop on Numerical Circulation & Ecosystem Modeling, NY, NY
2023	GO-BGC/BGC-Argo Float Data Workshop, UMass Boston, Boston, MA
2023	Simons CBIOMES Workshop on Transects & Eco-Provinces, MIT, Cambridge, MA
2021	TIDE Seminar: Racism, Colonialism, & Extraction within the Geosciences
2021	Unlearning Racism in Geoscience
2020	IOCCG 2020 Summer Lecture Series (Virtual Adaptation)

ACADEMIC SERVICE

2023 – 2024	MIT EAPS Toward Inclusion and Diversity (TIDE), Co-Organizer
2023	Reviewer for PLOS One
2023	MIT EAPS-SCC Faculty Search, Graduate Student Advisory Group Member
2020 – 2022	MIT EAPS Let's Invest in Neighborhood K-12 (LINK-12), Co-Founder
2020 – 2022	MIT EAPS Student Advisory Committee, Public Service Chair

2021 EAPS Application Mentorship Program, Outreach Coordinator
2020 – 2021 MIT EAPS Diversity, Equity, and Inclusion Committee, Member

MEMBERSHIP

2019 – MIT EAPS Toward Inclusion and Diversity (TIDE)
2019 – MIT Women in Course XII
2016 – 2018 Temple University Mathematics Club
2016 – 2018 Temple University Association for Women in Mathematics

PUBLIC OUTREACH

John H. Carlson Lecture Science Exhibit Volunteer
Oct 24, 2024 New England Aquarium Simons Theatre, Boston, MA, USA
Oct 19, 2023
Nov 14, 2019

K-12 Volunteer Scientist Speaker (MIT EAPS LINK-12, Skype-a-Scientist, etc.)
Dec 13, 2023 Jessica Crane 5th Grade, Kelly Elementary School, MA, USA
May 17, 2023 Elizabeth Jones Kindergarten, Rice Elementary, PA, USA
May 20, 2022
Feb 18, 2021
May 19, 2020
Jan 20, 2023 Christine Nicholson 5th Grade, Chenery Middle School, MA, USA
Oct 22, 2020 STEM Story Time 1st-3rd Grade, LET'S GO Boys and Girls, Inc, DC, USA
Oct 16, 2020 Dolores Simmons 4th Grade, Saint Mary's School, Vancouver, BC
Oct 15, 2020 Jessica Lincecum Kindergarten, Green Elementary, OH, USA
Sep 18, 2020 Caitlin Ward 12th Grade, Berkshire School, MA, USA
Jun 2, 2020 Briana Button Kindergarten, Rice Elementary, PA, USA
Jun 1, 2020 Michelle Brooks-Rogers Kindergarten, Rice Elementary, PA, USA
May 28, 2020 Yvonne Barley Kindergarten, Rice Elementary, PA, USA
May 21, 2020 Jennifer Detweiler Kindergarten, Rice Elementary, PA, USA
May 20, 2020 Nicole Sivilli 4th Grade, Harmony School, NJ, USA
May 18, 2020
Apr 20, 2020 Aaron Huber 7th Grade, Cayman International, Cayman Islands
Nov 2, 2019 Girls Day at the MIT Museum, Cambridge, MA

Trivia Creator and Host
2019 – 2020 Instagram Earth and Environment Tuesday Trivia (@lexi_ejones)

MEDIA COVERAGE

2023 Research and Technology Innovator: Alexandra Jones, Temple University 30 Under 30
2023 How This Grad Student Shifted Her Student Loan Strategy through the Pandemic, Personal Finance for PhDs Podcast
2019 Hey Beacher, Leave Those Fish Alone, Hakai Magazine
2018 Surfing with the Silversides, YouTube