Alexandra E. Jones-Kellett
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RESEARCH INTERESTS

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

EDUCATION

2024 (Antic.) **Ph.D., Biological Oceanography**, MIT-WHOI Joint Program in Oceanography
Massachusetts Institute of Technology, Dept. Earth, Atmospheric, & Planetary Sciences
Woods Hole Oceanographic Institution, Dept. of Biology
Thesis: Lagrangian interpretation of mesoscale biophysical interactions in the North Pacific Subtropical Gyre
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

2019 – **Graduate Research Assistant,** Follows Marine Biogeochemical Modeling Group
Massachusetts Institute of Technology, Dept. Earth, Atmospheric, & Planetary Sciences (EAPS)

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

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

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

1. Jones-Kellett AE & Follows MJ (2024; *in press*). A Lagrangian Coherent Eddy Atlas for Biogeochemical Applications in the North Pacific Subtropical Gyre. **Earth System Science Data**. doi.org/10.5194/essd-2023-425

In Preparation

4. Jones-Kellett AE, McNichol JC, Raut Y, Fuhrman JA, Follows MJ. Lagrangian Histories of Microbial Communities Along an Eastern North Pacific Transect. In preparation.
3. Jones-Kellett AE+, Padalino C+*, Britten G, Follows MJ. The effect of eddies on pCO_2 in the North Pacific surface ocean. In preparation for **Global Biogeochemical Cycles**.

2. Jones-Kellett AE, McNichol JC, Raut Y, Cain KR, Ribalet F, Armbrust EV, Follows MJ, Fuhrman JA. Remarkable Agreement between Absolute Picocyanobacteria Abundance Estimates from Amplicon Sequencing with Internal Standards and Flow Cytometry. In preparation for **ISME Brief Communications**.
1. Jones-Kellett AE & Follows MJ. Lagrangian Eddy Trapping Fosters Chlorophyll Hot Spots in the North Pacific Subtropical Gyre. In preparation for **Journal of Geophysical Research: Oceans.**

DATASETS AND SOFTWARE (+equal contribution)

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** (not yet publicly available). ncbi.nlm.nih.gov/bioproject/1079727
2. Jones-Kellett AE (2023). Rotationally Coherent Lagrangian Vortex Atlas of the North Pacific Subtropical Gyre. Dataset on **Simons CMAP**. simonscmap.com/catalog/datasets/RCLV_atlas
1. Jones-Kellett AE (2023). RCLVAtlas. Software on **Github**. doi.org/10.5281/zenodo.7702978

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

MENTORING AND ADVISING

Primary Advisor

2021	Sydney Kim, 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

HONORS AND AWARDS

2023	Temple University 30 Under 30
2022	FilaChange Student Travel Grant
2019	MIT EAPS John H. Carlson Fellowship
2019	NSF Graduate Research Fellowship Program, Honorable Mention
2018	Ocean Sciences Meeting Student Travel Grant
2017	Temple University Diamond Award
2017	Temple University Creative Arts Research and Scholarship Grant
2016, 2017	David Tepper, CST '64 and Elaine Kowalewski Scholarship in Mathematics
2016	Temple University Merit Scholarship Educational Enhancement Stipend
2016	White Haven Lions Club Scholarship
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

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.

INVITED PRESENTATIONS

Nov 15, 2023	Simon's Collaboration on Computational Biogeochemical Modeling of Marine Ecosystems
Oct 10, 2023	Mahadevan Group Meeting, Dept. of Physics, WHOI
Oct 2, 2023	Simon's Collaboration on Ocean Processes and Ecology (SCOPE), Gradients series
Sep 14, 2022	Simon's Collaboration on Computational Biogeochemical Modeling of Marine Ecosystems

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

2023	GO-BGC/BGC-Argo Float Data Workshop, UMass Boston, Boston, MA
2023	CBIOMES Transects & Eco-Provinces Workshop, 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 –	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

COMMUNITY OUTREACH

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
2019	Hey Beacher, Leave Those Fish Alone, Hakai Magazine
2018	Surfing with the Silversides, YouTube