

Lilian (Lily) Dove

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Education

California Institute of Technology Ph.D. in Environmental Science and Engineering Thesis title: <i>Impacts of Zonal Asymmetry on Southern Ocean Dynamics and Biogeochemistry</i>	Pasadena, CA June 2023
California Institute of Technology M.S. in Environmental Science and Engineering	Pasadena, CA June 2021
Massachusetts Institute of Technology B.S. in Earth, Atmospheric and Planetary Science	Cambridge, MA June 2018

Professional Appointments

Brown University NOAA Climate & Global Change Postdoctoral Fellow	Providence, RI September 2023 - present
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Publications

- Erickson, Z.K., Fields, E., Johnson, L., Thompson, A.F., **Dove, L.A.**, D'Asaro, E.A., Siegel, D.A. (2023). Eddy Tracking from in situ and Satellite Observations. *Journal of Geophysical Research: Oceans*.
- Swart, S., du Plessis, M.D., Nicholson, S-A., **Dove, L.A.**, Thomalla, S., Thompson, A.F., Biddle, L., Edholm, J.M., Giddy, I., Heywood, K.J., Lee, C., Mahadevan, A., Monteiro, P.M.S., Shilling, G., de Souza, R.B. (2023). The Southern Ocean Mixed Layer and its Boundary Fluxes: Fine-scale Observational Progress and Future Research Priorities. *Philosophical Transactions of the Royal Society A*, 381, 2249.
- **Dove, L.A.**, Viglione, G.A., Thompson, A.F., Flexas, M.M., *Cason, T.R., Sprintall, J. (2023). Controls on Wintertime Ventilation in Southern Drake Passage. *Geophysical Research Letters*, 50, 5.
- **Dove, L.A.**, Balwada, D., Thompson, A.F., Gray, A.R. (2022). Enhanced Ventilation in Energetic Regions of the Antarctic Circumpolar Current, *Geophysical Research Letters*, 49, 13.
- **Dove, L.A.**, Thompson, A.F., Balwada, D., Gray, A.R. (2021). Observational Evidence of Ventilation Hotspots in the Southern Ocean, *Journal of Geophysical Research: Oceans*, 126, 7.
- Wolf, M.J., Goodell, M., Dong, E., **Dove, L.A.**, Zhang, C., Franco, L.J., Shen, C., Rutkowski, E.G., Narducci, D.N., Mullen, S., Babbitt, A.R., and Cziczo, D.J. (2020). A Link between the Ice Nucleation Activity of Sea Spray Aerosol and the Biogeochemistry of Seawater, *Atmospheric Chemistry and Physics* 20, 23, 15341-15356.
- Wolf, M.J., Coe, A., **Dove, L.A.**, Zawadowicz, M.A., Dooley, K., Biller, S.J., Zhang, Y., Chisholm, S.W., Cziczo, D.J. (2019). Investigating the Heterogeneous Ice Nucleation of Sea Spray Aerosols Using *Prochlorococcus* as a Model Source of Marine Organic Matter. *Environmental Science and Technology* 53, 3, 1139-1149.

Submitted Publications

- Thompson, A.F., **Dove, L.A.**, *Flint, E., Lacour, L., Boyd, P.W. Interactions between Multiple Physical Particle Injection Pumps in the Southern Ocean. In revision at *Global Biogeochemical Cycles*.

- Balwada, D., Gray, A.R., **Dove, L.A.**, Thompson, A.F. Tracer Ventilation, Stirring, and Variability in the Antarctic Circumpolar Current near the Southwest Indian Ridge. In revision at *Journal of Geophysical Research: Oceans*.

Publications in Preparation (submission within 2 months)

- **Dove, L.A.**, Singer, C.E., Murphy, S.E. Ten Steps to Make Qualifying Examinations in Geoscience Graduate Programs More Equitable. In preparation for *AGU Advances*.

* denotes student advisees

Honors and Awards

- NOAA Climate & Global Change Postdoctoral Fellowship (2023-2025)
- Linde Center Community Building Award (2023)
- Caltech Certificate of Practice in Effective Teaching (2023)
- Richard H. Jahns Teaching Award (2022)
- Caltech Inclusion, Diversity, Equity, and Accessibility (IDEA) Advocate Award (2022)
- Resnick Sustainability Institute Scholar (2020)
- National Science Foundation Graduate Research Fellowship (2019-2022)
- American Meteorological Society First-Year Graduate Fellowship (2018)
- MIT Department of Earth, Atmospheric, and Planetary Science Excellence Award (2017)
- National Merit CSX Scientific Leadership Scholarship (2016)

Presentations

- Ocean Twilight Zone Symposium, Woods Hole, MA. September 2023. Poster and lightning talk.
- Southern Ocean Observing System Symposium, Hobart, Australia. August 2023. Talk.
- Polar Marine Science Gordon Research Conference, Ventura, CA. March 2023. Poster.
- GO-BGC Webinar, virtual. February 2023. Talk.
- University of Washington Physical Oceanography Seminar, Seattle, WA. October 2022. Talk.
- FilaChange Workshop, Providence, RI. August 2022. Talk.
- AMS Conference on Polar Meteorology and Oceanography, Madison, WI. August 2022. Talk.
- SOCCOM Annual Meeting, virtual. June 2022. Talk.
- Caltech Environmental Science and Engineering Seminar, Pasadena, CA. May 2022. Talk.
- Royal Society Southern Ocean discussion meeting, virtual. May 2022. Poster.
- Ocean Sciences Meeting, virtual. March 2022. Talk.
- Caltech Environmental Science and Engineering Seminar, Pasadena, CA. December 2021. Talk.
- Caltech Science and Society Seminar, Pasadena, CA. October 2021. Talk.
- Ocean Carbon and Biogeochemistry Summer Workshop, virtual. June 2021. Poster.
- Graduate Climate Conference, virtual. October 2020. Talk.
- Caltech FUTURE Ignited, virtual. October 2020. Talk for a general audience.
- SOCCOM Annual Meeting, virtual. June 2020. Talk.
- Explore Caltech, virtual. May 2020. Talk for a general audience.
- Ocean Sciences Meeting, San Diego, CA. February 2020. Poster.
- EAPS Student Achievement Seminar, Cambridge, MA. May 2018. Talk.
- MIT Cloud and Aerosol Seminar, Cambridge, MA. January 2018. Talk.
- Technion Environmental Engineering Seminar, Haifa, Israel. August 2017. Talk.
- MIT Environmental Sciences Seminar Series, Cambridge, MA. May 2017. Talk.

Publications and Recordings for a General Audience

- Exploring Our Blue Planet with Underwater Robots (2023). *Caltech Science Journey* on YouTube.
- In the turbulent Drake Passage, scientists find a rare window where carbon sinks quickly into the deep ocean (2023). Article in *The Conversation*.
- How Oceanographers Explore our Blue Planet (2020). *Explore Caltech* on YouTube.

Academic and University Service

Scientific Community Service:

- **Reviewer for:** Nature Communications, Geophysical Research Letters, Journal of Geophysical Research: Oceans, Frontiers in Marine Science, Progress in Oceanography
- **Session Organizer for:** AMS Conference on Polar Meteorology and Oceanography, Gordon Research Seminar on Polar Marine Science, AGU Ocean Sciences
- **Co-organizer** of the Polar Oceans Early Career Discussion Hour

University Service:

- Caltech Teaching Conference panelist September 2022
- Caltech Equity and Title IX Advocate September 2021-June 2023
- Environmental Science & Engineering student representative June 2021-June 2022
- *Life Beyond Research* seminar series founder and committee leader February 2021-January 2023
- Unlearning Racism in Geoscience (URGE) participant January 2021-present

Teaching

Caltech Teaching Conference	September 2021 & 2022
Facilitator for the Workshop on Effective Teaching	
Earth's Climate (ESE 1)	Spring 2022
Teaching Assistant and Guest Lecturer, Prof. Paul Wennberg, Caltech	
Earth's Oceans (ESE 102)	Fall 2019 & 2020
Teaching Assistant, Prof. Andrew Thompson, Caltech	
Principles of Chemical Science (5.111)	Spring 2016 & 2017
Teaching Assistant, Dr. Patricia Christie, MIT	

Mentoring

Taylor Cason	Summer 2022
Caltech WAVE Fellow	
Carbon Export in Drake Passage from Underwater Autonomous Vehicles and Satellites	
Ellie Flint	Summer 2021
Caltech WAVE Fellow	
Quantifying Carbon Export in the Southern Ocean: Observations from Ocean Gliders	
Peer Mentor	2019, 2020, 2021
Caltech Geological and Planetary Science	
Mentor for three first-year graduate students	

Research Cruises

GO-SHIP P02 Leg 2	June-July 2022
RV <i>Roger Revelle</i>	
Lowered Acoustic Doppler Current Profiler (LADCP) operations and outreach coordination along a decadal hydrographic survey line. 34 days.	

NBP 20-02: Thwaites Glacier

January-March 2020

RVIB *Nathaniel B. Palmer*

Seaglider and BGC-Argo float deployment and hydrographic survey in the Bellingshausen and Amundsen Seas. 60 days.

Florida Straits

March 2018

SSV *Corwith Cramer*

Study of the production and dispersion of sea spray aerosol at air-sea interface. 5 days.

Outreach

- Letters to a Pre-Scientist STEM professional September 2023-present
- Creative Tuition Collective & British Antarctic Survey career speaker June 2023
- Ivy Educational Group science speaker August 2022
- *Project Scientist* STEM Superstar (2x yearly) April 2021-present
- Caltech FUTURE Ignited science presenter October 2020
- Pasadena Unified School District science night presenter (6x yearly) September 2020-June 2023
- *Adopt-a-Float* SOCCOM representative September 2019-September 2021
- Los Angeles County Science Fair judge April 2019 & 2022