

HENRI F. DRAKE

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77 Massachusetts Ave, Cambridge, MA 02139
Room 1615, Building 54

EDUCATION

MIT/WHOI Joint Program in Oceanography *2016 - Present*
PhD Candidate in Physical Oceanography

Haverford College *2011 - 2015*
B.S. in Mathematics, Magna Cum Laude

EMPLOYMENT

Graduate Research Assistant, MIT/WHOI Joint Program in Oceanography *2016 - Present*
Research Specialist in Physical Oceanography, Princeton University *2015 - 2016*
Summer Research Assistant in Topology, Haverford College *2014*
Summer Research Assistant in Quantum Computing, University of Southern California *2013*
Summer Research Assistant in Environmental Engineering, Clarkson University *2012*

AWARDS

National Science Foundation Graduate Research Fellowship *2017 - Present*
MIT Rosenblith Presidential Fellowship *2016 - 2017*

RESEARCH PUBLICATIONS

Submitted

[Drake, H. F.](#), Lickley, M., Abbott, T. **Assessing climate model projections of anthropogenic warming patterns** (under review).

In preparation

[Drake, H. F.](#), Ferrari, R., Callies, J. **Circulation and stratification of an abyssal ocean controlled by bottom boundary layer mixing** (in preparation).

2018

[Drake, H. F.](#), Morrison, A. K., Griffies, S. M., Sarmiento, J. L., Weijer, W., Gray, A. R. (2018). **Lagrangian timescales of Southern Ocean upwelling in a hierarchy of model resolutions.** *Geophysical Research Letters*, **45**. [\[doi\]](#) [\[Read online\]](#)

van Sebille, E., Griffies, S. M., Abernathey, R., Adams, T. P., Berloff, P., Biastoch, A., Blanke, B., Chassignet, E. P., Yu Cheng, Y., Cotter, C. J., Deleersnijder, E., Döös, K., [Drake, H. F.](#), Drijfhout, S., Gary, S. F., Heemink, A. W., Kjellsson, J., Koszalka, I. M., Lange, M., Lique, C., MacGilchrist, G. A., Marsh, R., Adame, C. G. M., McAdam, R., Nencioli, F., Paris, C. B., Piggott, M. D., Polton, J. A., Rühls, S., Shah, S. H. A. M., Thomas, M. D., Wang, J., Wolfram, P. J., Zanna, L., Zika, J. D. (2018). **Lagrangian ocean analysis: fundamentals and practices.** *Ocean Modelling*, **121**, 49-75. [\[doi\]](#) [\[Download PDF\]](#)

2017

Tamsitt, V., [Drake, H. F.](#), Morrison, A. K., Talley, L. D., Dufour, C. A., Gray, A. R., Griffies, S. M., Mazloff, M. R., Sarmiento, J. L., Wang, J., Weijer, W. (2017). **Spiraling up: pathways of global deep water to the surface of the Southern Ocean.** *Nature Communications*, 8, 172. [[doi](#)] [[Download PDF](#)]

Other publications

[Drake, H. F.](#) (2019). **Eight ways to support women in science.** *EOS* [[doi](#)] [[Download PDF](#)]

SELECTED PRESENTATIONS

[Drake, H. F.](#), Callies, J., Ferrari, R. (2018). **Impact of Mixing Layer Flows on the Abyssal Circulation and Stratification.** *Workshop on Bottom Boundary Layer Turbulence and the Ocean Overturning Circulation*, Massachusetts Institute of Technology, MA. [TALK]

[Drake, H. F.](#), Callies, J., Ferrari, R. (2018). **Boundary Mixing Forcing Abyssal Overturning.** *Gordon Research Conference on Ocean Mixing*, Hannover, NH. [POSTER]

Hausfather, Z., [Drake, H. F.](#), Abbott, T., Schmidt, G. (2018). **Assessing the Performance of Past Model Forecasts.** *American Geophysical Union Fall Meeting*, Washington, DC. [POSTER]

[Drake, H. F.](#), Callies, J., Ferrari, R. (2018). **Testing a New Paradigm for the Abyssal Ocean Circulation.** *Ocean Sciences Meeting*, Portland, OR. [TALK]

[Drake, H. F.](#), Callies, J., Ferrari, R. (2018). **Testing a New Paradigm for the Abyssal Ocean Circulation.** *Ocean Sciences Meeting*, Portland, OR. [TALK]

[Drake, H. F.](#), Tamsitt, V., Morrison, A. K., Sarmiento, J. L., Griffies, S. M., Weijer, W., Gray, A. R., Talley, L., Wang, J., Mazzlof, M., Dufour, C. (2017). **Spatial and Temporal Structure of Southern Ocean Upwelling.** *Graduate Climate Conference*, Woods Hole, MA. [POSTER]

[Drake, H. F.](#), Tamsitt, V., Morrison, A. K., Sarmiento, J. L., Griffies, S. M., Weijer, W., Gray, A. R., Talley, L., Wang, J., Mazzlof, M., Dufour, C. (2016). **Three-Dimensional Pathways of Deep Water Upwelling in the Southern Ocean.** *Southern Ocean Carbon and Climate Observations and Modelling (SOCCOM) Annual Meeting*, Scripps Institution of Oceanography, CA. [TALK]

[Drake, H. F.](#), Morrison, A. K., Sarmiento, J. L., Griffies, S. M., Weijer, W., Gray, A. R., Dufour, C. (2016). **Lagrangian Upwelling Pathways of Deep Waters in the Southern Ocean.** *Ocean Sciences Meeting*, New Orleans, LA. [POSTER]

TEACHING

Guest lecturer (one 1.5 hour session) for graduate-level physical oceanography class at University of Rhode Island Graduate School of Oceanography (2019).

Lecturer (two 1.5 hour sessions) at the Summer Math Review for incoming graduate students in the Massachusetts Institute of Technology / Woods Hole Oceanographic Institution Joint Program in Oceanography (2017).

Staff tutor at Haverford College Math Question Center (2014-2015).

SERVICE

Planning Committee Co-Chair (2019), **Graduate Climate Conference.**

Planning Committee Member (2018), **Society for Women in Marine Sciences Annual Symposium.**

Planning Committee Member (2017), **Graduate Climate Conference.**

Retreat Planning Committee Chair (2017), **MIT Program for Atmospheres, Oceans, and Climate**.
Reviewer for *Nature* (1) and *Ocean Sciences* (1).

OUTREACH

Active Twitter for science communication ([@henrifdrake](#)), 1600+ followers.

Director of **Climate Gamers**, a program that used computer games to communicate climate science.

Active participant of Skype a Scientist program (15+ virtual classroom visits).

FIELD WORK

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| Upcoming | Bottom Layer Turbulence (30-40 day cruise).
Will investigate the turbulent bottom boundary layer along the continental slope of the Rockall Trough (off the west coast of Ireland), using a combination of ship-based casts, anchored mooring arrays, free-falling profilers, and inert tracer injections to measure turbulence statistics. |
| 2018 | MIT-WHOI Joint Program Orientation (10 days on <i>R/V Corwith Cramer</i>).
Conducted hydrographic and biological surveys of the shelf break jet south of Cape Cod and a warm core eddy on the northern flank of the Gulf Stream. |