

HILARY ILANA PALEVSKY

Department of Earth and Environmental Sciences, Boston College

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EDUCATION:

- Ph.D. Oceanography, University of Washington, June 2016
Graduate Certificate in Climate Science, June 2014
- M.S. Oceanography, University of Washington, March 2012
- B.A. Geology, *Summa cum laude*, Amherst College, May 2007
Williams-Mystic Maritime Studies Program, Mystic, CT, Fall 2005

PROFESSIONAL APPOINTMENTS:

- Assistant Professor**, Boston College, Dept. of Earth and Environmental Sciences, July 2019 – present
- Guest Investigator**, Woods Hole Oceanographic Institution, July 2018 – present
- Lecturer**, Wellesley College, Dept. of Geosciences, July 2018 – June 2019
- Postdoctoral Scholar**, Woods Hole Oceanographic Institution, Sept. 2016 – June 2018
Advisers: Dr. David P. Nicholson and Dr. Scott C. Doney
- Postdoctoral Researcher**, Univ. of Washington School of Oceanography, June – Aug. 2016
Adviser: Dr. Paul D. Quay
- Graduate Research Assistant**, Univ. of Washington School of Oceanography, June 2010 – June 2016
Advisers: Dr. Paul D. Quay and Dr. E. Virginia Armbrust
- Thomas J. Watson Fellow**, June 2007 – July 2008
Project: *Inside the Atlantic Cod Fishery: In Search of a Sustainable Future*

GRANTS AND FELLOWSHIPS:

- National Science Foundation Grant: “The Annual Cycle of the Biological Carbon Pump in the Subpolar North Atlantic” (co-PI with David P. Nicholson, WHOI; Total award: \$724,528, Award amount transferred to Boston College: \$103,015), 2018 – 2021
- Ocean Observatories Initiative Data Lab Fellowship (\$3,000), Spring 2020
- Woods Hole Oceanographic Institution Postdoctoral Scholarship (\$95,000), 2016 – 2018
- National Science Foundation Graduate Research Fellowship (NSF GRFP; \$121,500), 2010 – 2015
- National Defense Science and Engineering Graduate Fellowship (NDSEG; \$202,000), 2010 – 2013
- Achievement Rewards for College Scientists Seattle Chapter Fellowship (\$27,500), 2010 – 2014
- Univ. of Washington Program on Climate Change Fellowship (awarded but not used), Apr. 2010
- Thomas J. Watson Fellowship (\$28,000), June 2007 – July 2008

AWARDS:

- American Geophysical Union 2017 Editor's Citation for Excellence in Refereeing – Global Biogeochemical Cycles
- Mary Landsteiner Scholar Award, “For excellence in research at the intersection of interdisciplinary ocean science with advanced computing”, Univ. Washington School of Oceanography, April 2016
- Univ. Washington College of the Environment Travel Award, Feb. 2016
- Best Student Poster Award, SOLAS Summer School, Sept. 2013
- Outstanding Student Presentation Award, TOS/ASLO/AGU Ocean Sciences Meeting, Feb. 2012
- Phi Beta Kappa, Amherst College, April 2007
- Walter F. Pond Prize, Amherst College Geology Department, April 2007
- Belt-Brophy Prize, Amherst College Geology Department, April 2006

PUBLICATIONS:

- [12] Todd, R. E. et. al. (2019; **H. I. Palevsky** in alphabetical listing of 72 authors). Global perspectives on observing ocean boundary current systems. *Frontiers in Marine Science*, 6, 423, [https://doi: 10.3389/fmars.2019.00423](https://doi.org/10.3389/fmars.2019.00423).
- [11] Fuchsman, C. A., **H. I. Palevsky**, B. Widner, M. Duffy, M. C. G. Carlson, J. A. Neibauer, M. R. Mulholland, R. G. Keil, A. H. Devol, and G. Rocap (2019). Cyanobacteria and cyanophage contributions to carbon and nitrogen cycling in an oligotrophic oxygen-deficient zone. *The ISME Journal*, <https://doi.org/10.1038/s41396-019-0452-6>.
- [10] Fassbender, A. J., K. Rodgers, **H. I. Palevsky**, and C. L. Sabine (2018). Seasonal asymmetry in the evolution of surface ocean pCO₂ and pH thermodynamic drivers and the influence on sea-air CO₂ flux. *Global Biogeochemical Cycles*, 32, [https://doi: 10.1029/2017GB005855](https://doi.org/10.1029/2017GB005855).
- [9] **Palevsky, H. I.** and S. C. Doney (2018). How choice of depth horizon influences the estimated spatial patterns and global magnitude of ocean carbon export flux. *Geophysical Research Letters*, 45, <https://doi.org/10.1029/2017GL076498>.
- [8] **Palevsky, H. I.** and D. P. Nicholson (2018). The North Atlantic biological pump: Insights from the Ocean Observatories Initiative Irminger Sea Array. *Oceanography*, 31(1): 42-49, <https://doi.org/10.5670/oceanog.2018.108>.
- [7] Fassbender, A. J., **H. I. Palevsky**, T. R. Martz, A. E. Ingalls, M. Gledhill, S. E. Fawcett, J. Brandes, L. Aluwihare, and the participants of COME ABOARD and DISCO XXV (2017). Perspectives on Chemical Oceanography in the 21st Century: Participants of the COME ABOARD Meeting examine aspects of the field in the context of 40 years of DISCO, *Marine Chemistry*, 196, 181-190, <https://doi.org/10.1016/j.marchem.2017.09.002>.
- [6] Fassbender, A.J., C. L. Sabine, and **H. I. Palevsky** (2017), Non-uniform ocean acidification and attenuation of the ocean carbon sink, *Geophysical Research Letters*, 44, [doi:10.1002/2017GL074389](https://doi.org/10.1002/2017GL074389).
- [5] **Palevsky, H. I.** and P. D. Quay (2017), Influence of the biological pump on ocean carbon uptake over the annual cycle across the North Pacific Ocean, *Global Biogeochemical Cycles*, 31, [doi:10.1002/2016GB005527](https://doi.org/10.1002/2016GB005527).

- [4] **Palevsky, H. I.**, P. D. Quay, and D. P. Nicholson (2016), Discrepant estimates of primary and export production from satellite algorithms, a biogeochemical model, and geochemical tracer measurements in the North Pacific Ocean, *Geophysical Research Letters*, 43, doi:10.1002/2016GL070226.
- [3] **Palevsky, H. I.**, P. D. Quay, D. E. Lockwood, and D. P. Nicholson (2016), The annual cycle of gross primary production, net community production and export efficiency across the North Pacific Ocean, *Global Biogeochemical Cycles*, 30, doi: 10.1002/2015GB005318.
- [2] **Palevsky, H. I.**, F. Ribalet, J. E. Swalwell, C. E. Cosca, E. D. Cokelet, R. A. Feely, E. V. Armbrust, P. D. Quay (2013) The influence of net community production and phytoplankton community structure on CO₂ uptake in the Gulf of Alaska. *Global Biogeochemical Cycles*, 27, 664-676, doi:10.1002/gbc.20058.
- [1] Gezelius, S. S., T. J. Hegland, **H. I. Palevsky**, J. Raakjær, (2008) “The Politics of Implementation in Resource Conservation: Comparing the EU/Denmark and Norway,” in S.S. Gezelius, J. Raakjær (eds.), *Making Fisheries Management Work*, 207-229, Springer Science+Business Media B.V.

MANUSCRIPTS IN REVIEW AND IN PREPARATION

- Greengrove, C., C. S. Lichtenwalner, **H. I. Palevsky**, A. Pfeiffer-Herbert, S. Severmann, D. Soule, S. Murphy, L. M. Smith, and K. Yarincik (in revision). A Framework for Undergraduate Teaching with Data: Case Studies Using the Ocean Observatories Initiative. In revision for *Oceanography*.
- Quay, P. D., S. Emerson, and **H. I. Palevsky** (in preparation). Spatial pattern of the ocean’s biological pump based on geochemical observations.
- Clayton, S., **H. I. Palevsky**, L. Thompson, and P. D. Quay (in preparation). Uncovering multi-scale variations in net community production in the Kuroshio Extension from underway O₂/Ar measurements.

CONFERENCE PRESENTATIONS:

- Palevsky, H. I.** and S. C. Doney (2018), Sensitivity of ocean carbon export flux projections to the choice of export depth horizon. AGU Fall Meeting, Washington, D.C., 10-14 December 2018. Oral presentation.
- Palevsky, H. I.** (2018), The annual cycle of the biological carbon pump at the OOI Irminger Sea Array: Invited presentation as part of the Ocean Observatories Initiative Facility Board Town Hall. AGU Fall Meeting, Washington, D.C., 10-14 December 2018. Oral presentation.
- Wanzer, L. and **H. I. Palevsky** (2018), The influence of deep convection on biologically driven carbon sequestration in the Irminger Sea. AGU Fall Meeting, Washington, D.C., 10-14 December 2018. *Undergraduate student advisee* – oral presentation.
- Palevsky, H. I.** and D. P. Nicholson (2018), Seasonal export, thermocline respiration, and winter ventilation in the subpolar North Atlantic. TOS/ASLO/AGU Ocean Sciences Meeting, Portland, OR, 12-16 February 2018. Oral presentation.
- Palevsky, H. I.** (2018), Biogeochemistry at the Ocean Observatories Initiative Irminger Sea Array: Invited presentation as part of the Ocean Observatories Initiative Facility Board Town Hall. TOS/ASLO/AGU Ocean Sciences Meeting, Portland, OR, 12-16 February 2018. Oral presentation.
- Hernandez, C., S. N. Chu, **H. I. Palevsky**, G. Serrato Marks, and A. R. Sterling (2018), The Society for Women in Marine Science: How to bring SWMS to your institution. TOS/ASLO/AGU Ocean Sciences Meeting, Portland, OR, 12-16 February 2018. Town hall.

- Palevsky, H. I.** and D. P. Nicholson (2017), The North Atlantic biological pump: Insights from the Ocean Observatories Initiative Irminger Sea Array. Irminger Sea Regional Science Workshop, Southampton, UK, November 8-9 2017. Oral presentation.
- Palevsky, H. I.**, P. D. Quay, S. C. Doney, and C. Deutsch (2017), Influence of the biological pump on air-sea CO₂ flux depends on the magnitude and seasonal timing of physical processes. Ocean Carbon Hot Spots Workshop, Moss Landing, CA, September 25-26 2017. Poster
- Palevsky, H. I.** and S. C. Doney (2017), How choice of depth horizon influences estimated spatial patterns and global magnitude of ocean carbon export flux. Chemical Oceanography Gordon Research Conference, New London, NH, July 23-28 2017, and Ocean Carbon and Biogeochemistry Workshop, Woods Hole, MA, June 26-29 2017. Poster.
- Palevsky, H. I.** and P. D. Quay (2016), Influence of the biological pump on carbon uptake over the annual cycle across the North Pacific Ocean. TOS/ASLO/AGU Ocean Sciences Meeting, New Orleans, LA, 21-26 February 2016. Oral presentation.
- Palevsky, H. I.**, (2015) Ocean acidification data analysis in the chemistry classroom. American Association of Colleges and Universities STEM Conference, Seattle, WA, November 12-14 2015. Poster.
- Palevsky, H. I.**, P. D. Quay, D. E. Lockwood, D. P. Nicholson (2015), Winter ventilation depth controls annual net community production and export efficiency across the North Pacific Ocean, Chemical Oceanography Gordon Research Seminar and Conference, Holderness, NH, July 25-31 2015. Poster.
- Palevsky, H. I.**, P. D. Quay, D. E. Lockwood, D. P. Nicholson (2015), The annual cycle of gross primary production, net community production and export efficiency across the North Pacific Ocean, Ocean Carbon and Biogeochemistry Workshop, Woods Hole, MA, July 20-23 2015. Poster.
- Palevsky, H. I.**, D.E. Lockwood, E. J. Armstrong, P. D. Quay (2014) Rates and efficiency of the North Pacific biological pump. Graduate Climate Conference, Pack Forest, WA, October 31 – November 2 2014. Poster.
- Palevsky, H. I.**, D.E. Lockwood, E. J. Armstrong, P. D. Quay (2014) Gross primary production and net community production rates across the North Pacific from triple oxygen isotopes and oxygen/argon dissolved gas ratios. TOS/ASLO/AGU Ocean Sciences Meeting, Honolulu, HI, 23-28 February 2014. Oral presentation.
- Palevsky, H.I.**, Armstrong, E.J., and Quay, P.D. (2012) Quantifying the biological pump: comparing in-situ and satellite-based observations. Graduate Climate Conference, Pack Forest, WA, 26-28 October 2012. Poster.
- Palevsky, H.I.**, Ribalet, F., Cosca, C.E., Swalwell, J.E., Coker, E.D., Quay, P.D., Feely, R.A., and Armbrust, E.V. (2012) Explaining a narrow region of high CO₂ uptake in the Gulf of Alaska: The role of biological production and phytoplankton community structure. TOS/ASLO/AGU Ocean Sciences Meeting, Salt Lake City, UT, 20-24 February 2012. Abstract #10039. Poster.
- Palevsky, H.I.**, Ribalet, F., Cosca, C.E., Swalwell, J.E., Coker, E.D., Quay, P.D., Feely, R.A., and Armbrust, E.V. (2011) Using biological productivity and phytoplankton community structure to understand oceanic CO₂ uptake: A case study from the Gulf of Alaska. Graduate Climate Conference, Woods Hole, MA, 28-30 October, 2011. Oral presentation.
- Palevsky, H.**, Ribalet, F., Cosca, C.E., Quay, P., Armbrust, E.V., and Feely, R.A. (2010) Biological productivity, phytoplankton community structure and air-sea CO₂ flux in the surface waters of the

Gulf of Alaska. American Geophysical Union Fall Meeting, San Francisco, CA, 13-17 December 2010. Abstract #OS51A-1271. Poster.

Palevsky, H.I., A.M. Martini, and Ku, T.C.W. (2007) The pore water chemistry, microbial processes, and trace metal mobility of bioluminescent bays. Geological Society of America Northeastern Meeting, Durham, NH, 12-14 March 2007. Abstract #117605. Poster.

INVITED TALKS:

University of Connecticut, Marine Sciences Seminar, November 2019

Caltech, Environmental Science and Engineering Seminar, October 2019

Carleton College, Geology Department Seminar, February 2019

Harvard University, Earth and Planetary Sciences/Environmental Sciences and Engineering Joint Colloquium Series, March 2018

National Center for Atmospheric Research, Climate and Global Dynamics Laboratory, Oceanography Seminar, March 2018

Williams College, Geosciences Seminar, February 2018

University of Massachusetts – Dartmouth, Estuarine and Ocean Sciences Seminar, November 2017

Lamont-Doherty Earth Observatory, Biology and Paleoenvironment Seminar, March 2017

Wellesley College, Geosciences Seminar, February 2017

University of New Hampshire, Earth Sciences Department Seminar, February 2017

Colby College, Geology Department Seminar, February 2017

Oberlin College, Geology Department Seminar, January 2017

Woods Hole Oceanographic Institution, Marine Chemistry and Geochemistry Seminar, January 2017

University of Victoria, Earth and Ocean Sciences Department Seminar, October 2016

PROFESSIONAL SERVICE:

Reviewer for: *Progress in Oceanography*, *Geophysical Research Letters*, *Journal of Geophysical Research: Oceans*, *Global Biogeochemical Cycles*, *Limnology and Oceanography*, *Deep-Sea Research Part I*, *National Science Foundation (panelist and reviewer)*, *National Defense Science and Engineering Graduate (NDSEG) fellowship program*

Boston College

Earth and Environmental Sciences Colloquium Series Organizer, July 2019 – present

Earth and Environmental Sciences Diversity and Inclusion Committee, July 2019 – present

Courageous Conversations Towards Racial Justice (CC@BC) Core Team, Oct. 2019 - present

Society for Women in Marine Science

Advisory Committee, July 2018 – present

Steering Committee, October 2016 – June 2018

Woods Hole Oceanographic Institution Postdoctoral Association

President, Oct. 2016 – Oct. 2017; At Large Member, Oct. 2017 – June 2018

Postdoc representative, Gender Equity Program Advisory Committee, Nov. 2016 – Dec. 2017

Gordon Research Seminar (GRS) in Chemical Oceanography

Co-Chair, July 2015 – July 2017, for GRS held July 22-23, 2017 in New London, NH

Graduate Climate Conference (GCC)
Carbon Cycle Session Chair, GCC8 (2014)
Fundraising Co-Chair, Organizing Committee, Abstract Committee, GCC6 (2012)

University of Washington Program on Climate Change
Graduate Student Seminar Co-Organizer, Mar. 2014 – June 2016
Graduate Student Representative to the Executive Board, Sept. 2013 – Aug. 2014

University of Washington School of Oceanography
Graduate Student Representative to the Undergraduate Academic Affairs Committee,
Sept. 2015 – June 2016
Graduate Student Representative to the College of the Environment Curriculum Committee,
June 2013 – June 2015
Graduate Student Representative to the Faculty, Oct. 2011 – July 2012

PROFESSIONAL DEVELOPMENT:

EARTH AND ENVIRONMENTAL SCIENCES:

CMIP6 Hackathon, National Center for Atmospheric Research
Oct. 2019, Boulder, CO

Synthesis and intercomparison of ocean carbon uptake in CMIP6 models: Community workshop
Dec. 2018, Washington, D.C. – sponsored by the Ocean Carbon and Biogeochemistry program

OceanHackWeek, Data Science + Oceanography, University of Washington e-Science Institute
August 2018, Seattle, WA

Invited Visitor, National Center for Atmospheric Research, Climate and Global Dynamics Laboratory
March 2018, Boulder, CO

Dissertations Symposium in Chemical Oceanography (DISCO XXV)
Oct. 2016, Honolulu, HI

Surface Ocean-Lower Atmosphere Study (SOLAS) Summer School
Aug. – Sept. 2013, Xiamen, China

UW Program on Climate Change Summer Institutes, Friday Harbor Labs, WA
Interactions between Terrestrial Ecosystems, Land Surface Processes and Climate, Sept. 2015
Climate Variability and Uncertainty, Sept. 2014
Response of Marine Ecosystems to Climate Forcing: Causes and Consequences, Sept. 2013
The Water Cycle in a Changing Climate, Sept. 2011
Climate Feedbacks, Sept. 2010

Indiana University Geology Field School in Environmental Geology
June – Aug. 2005, Tobacco Root Mountains, MT

TEACHING AND OUTREACH:

On the Cutting Edge: Preparing for an Academic Career in the Geosciences
June 2015, Madison, WI

An Introduction to Evidence-Based Undergraduate STEM Teaching (completed with distinction)
Sept. – Nov. 2014, offered online from Vanderbilt University

Teaching and Learning in Higher Education
Jan. – Mar. 2014, 2 credit course at the Univ. of Washington

COMPASS Science Communication Training Workshop
Oct. 2013, 1 credit course at the Univ. of Washington

Teaching Assistant Training
Sept. 2011, 2 credit course at the Univ. of Washington

TEACHING EXPERIENCE:

Lecturer, Wellesley College, Department of Geosciences
The Dynamic Earth (GEOS 102), Fall 2018, Spring 2019
Oceanography (GEOS 208), Fall 2018
Earth System Data Science (GEOS 215), Spring 2019

Instructor, Woods Hole Diversity Committee Partnership Education Program
Chemical Oceanography course module, July 2017

Visiting Member of the Faculty, The Evergreen State College
General Chemistry II with Laboratory, July – Sept. 2014

Teaching Assistant, Univ. of Washington School of Oceanography
Senior Thesis Capstone Sequence (OCEAN 443, 444, 445), Sept. 2012 – June 2013
Principles of Oceanography (OCEAN 200), Mar. – June 2012

Guest Instructor

Oceans and the Global Carbon Cycle, SEA Semester: Oceans & Climate, Mar. 2019
Case Studies and Thesis Design, The Evergreen State College, Oct. 2015
The Earth System and Climate (ESS 201), Univ. of WA, May 2015
General Chemistry (Chemistry 161), North Seattle College, Nov. 2014
Climate Change Impacts on Marine Ecosystems (ENVIR 330), Univ. of WA, May 2014
Our Changing Oceans: Science and Policy, The Evergreen State College, Feb. 2014
Seminar on Current Research in Climate Change (OCEAN 475), Univ. of WA, Oct. 2013
Pick Colloquium on Fisheries, Amherst College, Feb. 2009

Marine Science Shipboard Educator

Schooner Quinipiack, Mar. – Oct. 2009
Schooner SoundWaters, Aug. – Nov. 2008

Teaching Assistant, Amherst College, Principles of Geology, Feb. – May 2006

MENTORSHIP EXPERIENCE:

Boston College

- MS Thesis Committee member for Andrew Gorin (MS '20) and Sarah Jonathan (MS '20)

Wellesley Science Center Summer Research Program

- Claire Hayhow '21 and Thanda Newkirk '21, Summer 2019
- Emma Jackman '19 and Lucy Wanzer '19, Summer 2018

Wellesley College, Undergraduate Senior Thesis Adviser

- Lucy Wanzer '19, 2018-2019 academic year, now a Thomas J. Watson Fellow

Woods Hole Oceanographic Institution Guest Student Program

- Sarah Smith-Tripp (Wellesley '19) and Lucy Wanzer (Wellesley '19) Jan.-Feb 2018

Woods Hole Oceanographic Institution Summer Student Fellowship Program

- Kanieka Neal (U. Maryland-Eastern Shore '18), Summer 2017, now at Tishcon Corporation

University of Washington School of Oceanography, Undergraduate Senior Thesis Adviser

- Research mentor for 11 senior thesis students as course TA, 2012-2013 academic year

University of Washington School of Oceanography, Quay Lab students supervised

- Gregory Ikeda, '12 (Feb. – Sept. 2013), now at Sea-Bird Scientific
- Mariela White (née Tuquero), '13 (Jan. 2012 – Feb. 2013), now a Research Scientist/Engineer at the University of Washington School of Oceanography
- Veronica Tamsitt, '12 (Summer 2010 and 2011), now a Postdoctoral Fellow at the Center for Southern Hemisphere Ocean Research, University of New South Wales

OUTREACH:

Letters to a Pre-Scientist Pen Pal, Sept. 2012 – present

Weston Observatory Public Colloquium Series lecture on “The Ocean’s Role in Global Climate Change,” Dec. 2019

“Science Steps Out” presentation at the Woods Hole Public Library, April 2017

Falmouth Public Schools Science and Engineering Fair Judge, Mar. 2017

Ocean Inquiry Project, Volunteer Instructor, May 2011 – July 2016

Presentations (12) to high school classes on climate change and ocean acidification, 2013 – 2017

High school teacher trainings, Workshop leader, June 2014, Oct. 2014, and Oct. 2015

Amherst Pathways Mentor to an undergraduate Chemistry major, Jan. – June 2015

Central Sound Regional Science and Engineering Fair Mentor, Jan. – Mar. 2015

5th Grade Science Fair Mentor, John Stanford International School, Jan. – April 2014

C2S2 Climate Change Student Summit, Science Mentor, April 2012

Educurious Expert Mentor, Ecological Impacts of Climate Change (9th grade), Oct. – Dec. 2011

FIELD WORK:

Irminger Sea recovery/redeployment cruises for the Ocean Observatories Initiative

R/V Neil Armstrong, June 2018 (3 weeks) and August 2019 (4 weeks)

Kuroshio Extension student cruise in the Northwest Pacific Ocean (PIs S. Emerson and S. Riser)

R/V Melville, February-March 2013, 4 weeks

Vessel of opportunity cruises from Hong Kong to Long Beach, CA, USA

M/V OOCL Tokyo, May 2011 and January-February 2012, each 2 weeks

M/V OOCL Tianjin, July-August 2012, 2 weeks

PRISM Puget Sound time series cruise

R/V Thomas G. Thompson, November 2010, 2 days

International Bottom Trawl Survey of the North Sea, Scottish Fisheries Research Services

FRV Scotia, February 2008, 1 week

Northern Shrimp Survey, Marine Research Institute of Iceland

R/V Bjarni Sæmundsson, July 2007, 2 weeks

The Hydrodynamics and Biogeochemistry of Bioluminescent Bays, Keck Geology Consortium

Vieques, Puerto Rico, June 2006, 2 weeks

Williams-Mystic Maritime Studies Program Offshore Field Seminar, Gulf of Maine

SSV Corwith Cramer, August – September 2005, 10 days

PROFESSIONAL AFFILIATIONS:

The Society for Women in Marine Science (2016 – present)

The Oceanography Society (2015 – present)

National Association of Geoscience Teachers (2015 – present)

Earth Science Women's Network (2014 – present)

American Geophysical Union (2010 – present)

Sigma Xi (2007 – present)