

# Nicole Couto

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## Education

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2017	Ph.D. in Oceanography, Rutgers University
2008	B.A. in Physics, University of California at Santa Barbara

## Professional Experience

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2020 – present	Assistant Project Scientist, Scripps Institution of Oceanography, Marine Physical Laboratory
2017 – 2020	Postdoctoral Scholar, Scripps Institution of Oceanography, Marine Physical Laboratory
2011 - 2017	Graduate Assistant, Rutgers University, Department of Oceanography
2010 – 2011	Research Technician, University of California at Santa Cruz, Department of Ocean Sciences

## Peer-reviewed Publications

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Fine, E. C., J. A. MacKinnon, M. H. Alford, L. Middleton, J. Taylor, J. Mickett, S. Cole, **N. Couto**, A. Le Boyer, T. Peacock (in revision), Double diffusion, shear instabilities, and heat impacts of a Pacific Summer Water intrusion in the Beaufort Gyre. *Journal of Physical Oceanography*. (in revision)

Bowman, J. S., B. A. S. Van Mooy, D. P. Lowenstein, H. F. Fredricks, C. M. Hansel, R. Gast, J. R. Collins, **N. Couto**, H. W. Ducklow (2021), Whole Community Metatranscriptomes and Lipidomes Reveal Diverse Responses Among Antarctic Phytoplankton to Changing Ice Conditions. *Front. Mar. Sci.*, **8**, <https://doi.org/10.3389/fmars.2021.593566>.

MacKinnon, J. A., H. L. Simmons, J. Hargrove, J. Thomson, T. Peacock, M. H. Alford, B. I. Barton, S. Boury, S. D. Brenner, **N. Couto**, S. L. Danielson, E. C. Fine, H. C. Graber, J. Guthrie, J. E. Hopkins, S. R. Jayne, C. Jeon, T. Klenz, C. M. Lee, Y. Lenn, A. J. Lucas, B. Lund, C. Mahaffey, L. Norman, L. Rainville, M. M. Smith, L. N. Thomas, S. Torres-Valdés, K. R. Wood, (2021), A warm jet in a cold ocean. *Nature Communications*, **12**, 2418, <https://doi.org/10.1038/s41467-021-22505-5>.

Le Boyer, A. L., M. H. Alford, **N. Couto**, M. Goldin, S. Lastuka, S. Goheen, T. Hennon (2021), Modular, Flexible, Low-Cost Microstructure Measurements: The Epsilometer. *Journal of Atmospheric and Oceanic Technology*, **38**, 657–668, <https://doi.org/10.1175/JTECH-D-20-0116.1>.

**Couto, N.**, M. Alford, J. MacKinnon, J. Mickett (2020), Mixing Rates and Bottom Drag in Bering Strait, *Journal of Physical Oceanography*, **50**, 809-825, <https://doi.org/10.1175/JPO-D-19-0154.1>

Carvalho, F., Fitzsimmons, J., **Couto, N.**, Waite, N., Gorbunov, M., Kohut, J., et al. (2019), Testing the canyon hypothesis: Evaluating light and nutrient controls of phytoplankton growth in penguin foraging hotspots along the West Antarctic Peninsula. *Limnology and Oceanography*. <https://doi.org/10.1002/LNO.11313>

Kohut, J. T., P. Winsor, H. Statscewich, M. J. Oliver, E. Fredj, **N. Couto**, K. Bernard, and W. Fraser (2018), Variability in summer surface residence time within a West Antarctic Peninsula biological hotspot, *Philosophical Transactions of the Royal Society. A*, 376(2122), 20170165, doi:10.1098/rsta.2017.0165.

**Couto, N.**, J. Kohut, D. Martinson, O. Schofield (2017), Distribution of Upper Circumpolar Deep Water on the warming continental shelf of the West Antarctic Peninsula, *Journal of Geophysical Research: Oceans*, doi:10.1002/2017JC012840.

Schofield, O., G. Saba, K. Coleman, F. Carvalho, **N. Couto**, H. Ducklow, Z. Finkel, A. Irwin, A. Kahl, T. Miles, M. Montes-Hugo, S. Stammerjohn, N. Waite (2017), Decadal variability in coastal phytoplankton community composition in a changing West Antarctic Peninsula, *Deep Sea Research I*, doi:10.1016/j.dsr.2017.04.014.

Stukel, M. R., E. Asher, **N. Couto**, O. Schofield, S. Strebel, P. Tortell, and H. Ducklow (2015), The imbalance of new and export production in the Western Antarctic Peninsula, a potentially “leaky” ecosystem, *Global Biogeochem. Cycles*, 29(9), 1400–1420, doi:10.1002/2015GB005211.

Marian, J., L. A. Zepeda-Ruiz, **N. Couto**, E. M. Bringa, G. H. Gilmer, P. C. Stangeby, and T. D. Rognlien (2007), Characterization of sputtering products during graphite exposure to deuterium ions by molecular dynamics, *Journal of Applied Physics*, 101(4), 044506, doi:10.1063/1.2496577.

## Other Publications

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**Couto, N.**, J. Kohut, O. Schofield, M. Dinniman, J. Graham (2017), Pathways and retention times in a biologically productive canyon system on the West Antarctic Peninsula, *OCEANS 2017-MTS/IEEE Anchorage*.

**Couto, N.**, O. Schofield, J. Kohut (2016), Comparison between glider-derived geostrophic velocities and shipboard ADCP measurements, *OCEANS 2016-MTS/IEEE Monterey*, doi:10.1109/OCEANS.2016.7761286

## Grants and Awards

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2014	Teledyne-Webb Graduate Fellowship
2014	Teledyne RDI Academic Grant

## Activities and Outreach

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Manuscript Reviewer:	Journal of Atmospheric and Ocean Technology, Journal of Geophysical Research: Oceans, Progress in Oceanography, Nature Communications Earth and Environment
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2021	Science mentor to Scripps + Career Girls Environmental Camp
2018	STEMSEAS instructor on R/V <i>Sikuliaq</i> transit from Nome, AK to Seward, AK
2018	Science mentor to St. Joseph's Academy, St. Louis, MO high school marine science student
2015-2018	National Ocean Sciences Bowl volunteer
2015-2017	Co-chair of Gordon Research Seminar on Polar Marine Science

2015-2017	Contributing author at Oceanbites.org, a blog that explains recent literature in oceanography to non-experts.
2014	Graduate student mentor for Research Internships for Ocean Sciences (RIOS) program
2012 - 2015	Seminar series organizer for the Department of Marine and Coastal Sciences at Rutgers University

## Presentations

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2021	University of Alaska, Fairbanks, via Zoom (invited talk), "Mixing Rates and Bottom Drag in Bering Strait"
2020	ACE STEM Series, UC Santa Cruz, via Zoom, (invited talk)
2020	Ocean Sciences Meeting, San Diego, CA, "Eddy Shedding from a Pacific Summer Water Plume," (poster)
2019	Scripps Institution of Oceanography, Climate, Atmospheric Sciences, and Physical Oceanography Seminar Series, "Turbulence measurements in Bering Strait," (talk)
2018	Rutgers University, New Brunswick, NJ, "Turbulent controls on properties of water entering the Arctic through Bering Strait," (talk)
2018	Gordon Research Conference, Ocean Mixing, Andover, NH, "Turbulent controls on properties of water entering the Arctic through Bering Strait," (poster)
2018	Ocean Sciences Meeting, Portland, OR, "Turbulent controls on properties of water entering the Arctic through Bering Strait," (poster)
2017	Teledyne Marine Technology Workshop, San Diego, CA, "Tidal and wind-driven controls on heat flux at the head of Palmer Deep Canyon," (poster)
2017	Gordon Research Conference, Polar Marine Science, Ventura, CA, "Tidal and wind-driven controls on heat flux near Palmer Station, Antarctica," (poster)
2016	Palmer LTER Meeting, New Brunswick, NJ, "Tidal and wind-driven currents near Palmer Station," (talk)
2016	Marine Technology Society Oceans Conference, Monterey, CA, "Comparison between glider-derived geostrophic velocities and shipboard ADCP measurements," (talk)
2015	Kean University, Biology Department, "Life adjusts to a warming Antarctic," (invited talk)
2015	Long Term Ecological Research (LTER) All Scientists Meeting, Estes Park, CO, "Modeling the pathways to Palmer Deep, a biologically productive canyon," (poster)
2015	Teledyne Marine, Falmouth, MA, "Warm water intrusions onto the continental shelf of the West Antarctic Peninsula," (talk)
2015	Gordon Research Conference, Polar Marine Science, Barga, Italy, "A census of Upper Circumpolar Deep Water on the continental shelf of the West Antarctic Peninsula," (talk and poster)
2015	Southern Ocean Dynamics and Biogeochemistry Workshop, Pasadena, CA, "Glider operations along the West Antarctic Peninsula," (poster)
2014	Rutgers Joint Graduate Student Association meeting, New Brunswick, NJ "Where does warm water enter on the continental shelf of the West Antarctic Peninsula?" (talk)
2014	Palmer LTER Meeting, Williamsburg, VA, "A census of Upper Circumpolar Deep Water along the West Antarctic Peninsula," (talk)
2014	Scientific Committee on Antarctic Research (SCAR) Open Science Conference, Auckland, NZ, "A census of Upper Circumpolar Deep Water on the continental shelf of the West Antarctic Peninsula," (talk)
2013	Graduate Climate Conference, Woods Hole, MA, "The importance of eddies in delivering heat to the West Antarctic Peninsula," (poster)
2013	Gordon Research Conference, Coastal Ocean Circulation, Biddeford, ME, "Glider Observations of Subsurface Antarctic Circumpolar Current Water Along the West Antarctic Peninsula," (poster)

2012 Long Term Ecological Research (LTER) All Scientists Meeting, Estes Park, CO,  
 “Characteristics of eddies shed from the Antarctic Circumpolar Current,” (poster)

## Field Experience

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2021	RRS <i>Discovery</i> , Southampton, UK, Bottom Layer Turbulence - Watchstander (June 19 – July 29)
2019	R/V <i>Sally Ride</i> , San Francisco, CA, MendoModes – Watch leader (Dec. 1-8)
2019	R/V <i>Armstrong</i> , Reykjavik, Iceland, NISKINe (Near-Inertial Shear and Kinetic Energy in the North Atlantic experiment) – Watch leader (May 13-22)
2018	R/V <i>Sikuliaq</i> , Nome, AK, STEMSEAS (Science, Technology, Engineering and Math Student Experiences Aboard Ships)– Instructor (Oct. 2 - 9)
2018	R/V <i>Sikuliaq</i> , Nome, AK, Stratified Ocean Dynamics of the Arctic – Watchstander (Sept. 1 - 30)
2016	R/V <i>Laurence M. Gould</i> , Palmer Station, Antarctica, Long Term Ecological Research Project – Field Team Leader (Jan. 10 – Feb. 17)
2015 -2016	United States Antarctic Program, Palmer Station, Antarctica, Long Term Ecological Research Project – Field Team Leader (Oct. 19 – Jan. 10)
2015	R/V <i>Oceanus</i> , Guaymas Basin, Mexico, Ocean acidification: oxygen-limited CO2 tolerance in squids – Glider technician (May 16-27)
2014	United States Antarctic Program, Palmer Station, Antarctica, Long Term Ecological Research Project – Field Team Leader (Feb. 5 – Mar. 31)
2014	R/V <i>Laurence M. Gould</i> , Palmer Station, Antarctica, Long Term Ecological Research Project (Dec. 31 – Feb. 5)
2013	R/V <i>Point Sur</i> , Palmer Station, Antarctica, Long Term Ecological Research Project (Jan. 27-29)
2012–2013	United States Antarctic Program, Palmer Station, Antarctica, Long Term Ecological Research project – Field Team Leader (Oct. 9 – Feb. 3)
2012	SSV <i>Corwith Cramer</i> , Woods Hole, MA, Sea Education Association - Deckhand (Aug. 10-23)
2012	United States Antarctic Program, Palmer Station, Antarctica, Long Term Ecological Research Project – Field Team Member (Dec. 27 – Feb. 1)
2011	SSV <i>Corwith Cramer</i> , Woods Hole, MA, Sea Education Association - Deckhand (May 9 – Aug. 23)
2011	R/V <i>Knorr</i> , Halifax, NS, Growth, Formation, and Separation of the Northwest Corner Eddy – Watchstander (Feb. 26 – Apr. 1)
2009-2010	SSV <i>Robert C Seamans</i> , Honolulu, HI, Sea Education Association – Student (Nov. 27 – Jan. 4)
2008	R/V <i>Shearwater</i> , Santa Barbara, CA – Student (May 5-6)