

# Filipa Carvalho

National Oceanography Centre (NOC), Southampton  
SO14 3ZH, United Kingdom  
email: filipa.carvalho@noc.ac.uk

ORCID: 0000-0002-8355-4329  
Research ID: B-7223-2017  
web: filipacarvalho.weebly.com/

## RESEARCH INTERESTS

Biophysical interactions, phytoplankton, upper ocean dynamics, autonomous oceanography, gliders, ocean optics, biological carbon pump, integrated ocean observatories, remote sensing, polar ecosystems

## EDUCATION

PhD, Oceanography, Rutgers University, United States.	2017
MSc, Fisheries and Aquaculture, University of Lisbon, Portugal.	2009
LIC (Pre-Bologna), Environmental Marine Biology, University of Lisbon, Portugal	2007

## PROFESSIONAL APPOINTMENTS

NOC (UK), Postdoctoral Researcher in <i>Biogeochemistry and Autonomous Vehicles</i>	2017- Present
Rutgers University (USA), Postdoctoral Research Associate,	2017
Rutgers University (USA), Teaching/Research Assistant	2011-2017
University Azores (Dept of Oceanography and Fisheries, PT), Research Assistant	2009-2011

## AWARDS, HONORS

NOC Directorate of Science and Technology Early Career Award for Science 2019	2019
Ocean Obs'19 Travel Grant Award	2019
Graduate School of New Brunswick Travel Grant Award	2017
NSF Scientific Committee on Antarctic Research OSC Travel Grant Award	2016
Antarctic Service Medal	2011
European Meteorological Society Young Scientist Award	2010

## FUNDING

H2020 TechOceanS (Res Co-I). €9M	2021-2024
NERC Global Partnership Seedcorn Fund, BIARRITZ (Res Co-I). £83k	2018-2020
Teledyne Graduate Research Fellowship, 2 years	2015-2017
Foundation for Science and Technology (FCT, PT), Doctoral Grant, 4 years	2011-2015
Luso-American Foundation (FLAD) Saldanha/Tenore Fellowship, 3 months	2009

## SELECTED PUBLICATIONS

**Carvalho**, Gorbunov, Oliver, Haskins et al. (2020). FIRE glider: Mapping *in situ* chlorophyll variable fluorescence with autonomous underwater gliders. *Limnol Oceanogr Methods*. doi: [10.1002/lom3.10380](https://doi.org/10.1002/lom3.10380).

**Carvalho**, Fitzsimmons, Couto, Waite et al. (2020). Testing the Canyon Hypothesis: Evaluating light and nutrient controls of phytoplankton growth in penguin foraging hotspots along the West Antarctic Peninsula. *Limnol Oceanogr*. doi: [10.1002/lno.11313](https://doi.org/10.1002/lno.11313).

Laber, Hunter, **Carvalho**, Collins et al. (2018). Coccolithovirus stimulation of carbon export in the North Atlantic. *Nature Microbiology*. doi: [10.1038/s41564-018-0128-4](https://doi.org/10.1038/s41564-018-0128-4).

**Carvalho**, Kohut, Oliver, Schofield (2017). Defining the ecologically relevant mixed-layer depth for Antarctica's coastal seas, *Geophys. Res. Lett.* doi: [10.1002/2016GL071205](https://doi.org/10.1002/2016GL071205).

Schofield, Saba, Coleman, **Carvalho**, et al. (2017). Decadal variability in coastal phytoplankton community composition in a changing West Antarctic Peninsula, *Deep Sea Res I*. doi: [10.1016/j.dsr.2017.04.014](https://doi.org/10.1016/j.dsr.2017.04.014).

**Carvalho**, Kohut, Oliver, Sherrell, Schofield (2016). Mixing and phytoplankton dynamics in a submarine canyon in the West Antarctic Peninsula, *J. Geophys. Res. Oceans*, doi: [10.1002/2016JC011650](https://doi.org/10.1002/2016JC011650).

Yi, Glenn, **Carvalho**, Jones, et al. (2019). Chapter 8 - Glider Technology Enabling a Diversity of Opportunities with Autonomous Ocean Sampling. In Delory & Pearlman (Eds.), *Challenges and Innovations in Ocean in Situ Sensors*. Elsevier. doi: [10.1016/B978-0-12-809886-8.00008-9](https://doi.org/10.1016/B978-0-12-809886-8.00008-9).

## FIELD EXPERIENCE

7 cruises (3+ weeks) conducting glider operations, CTD and water sampling for biogeochemistry, primary

productivity, optical profiling (AC9, PRR, Hyperpro, LISST Holo, ECO triplet), experimental incubations; Scientific diver/lead diver on multiple projects; Glider operations from small and large vessels for multiple projects (Azores, Mid Atlantic Bight, Southern Ocean, West Antarctic Peninsula, Ross Sea, Benguela)

<b>RRS Discovery</b> , Southern Ocean. <i>CUSTARD 1 (DY096)</i> cruise, 3 weeks	2018
<b>RRS Discovery</b> , Benguela. <i>COMICS II (DY090)</i> cruise, 6 weeks	2018
<b>RV Mirabilis</b> , Benguela, <i>GOCART II (Hake MOM1802)</i> cruise, 3 weeks (glider lead)	2018
<b>RRS Discovery</b> , South Georgia. <i>COMICS I (DY086)</i> cruise, 6 weeks	2017
<b>Espgrend Marine Research Field Station</b> , Norway. <i>MesoHux</i> . 4 weeks (dive leader)	2017
<b>ARSV Laurence M. Gould</b> , West Antarctic Peninsula. <i>PAL-LTER</i> cruise, 4+ weeks	2015
<b>R/V Joanne Daiber</b> , Delaware. Dye Experiment (Philadelphia Water Dept), 1 week	2014
<b>ARSV Laurence M. Gould</b> , West Antarctic Peninsula. <i>PAL-LTER</i> cruise, 4+ weeks	2014
<b>Palmer Station, Antarctica</b> . <i>PAL-LTER</i> cruise, 3+ months (science leader)	2013
<b>R/V Knorr</b> , North Atlantic. <i>NA-VICE</i> cruise, 5 weeks	2012
<b>R/V Nathaniel B. Palmer</b> , Ross Sea, Antarctica. <i>SEAFARERS</i> cruise, 7 weeks	2011
<b>DOP</b> , Faial, Portugal. <i>INVASORAS</i> . Exploration/scientific dives. 3 months	2010

### INVITED SEMINARS/LECTURES (selected)

<i>Observing ocean biogeochemistry from afar: a remote sensing approach</i> . Uni. Southampton, UK	2019
<i>Variability in the biological carbon pump</i> . Council for Scientific and Industrial Research, South Africa	2018
<i>Mixing and phytoplankton dynamics in Antarctica's coastal seas</i> . British Antarctic Survey, UK	2016
<i>RUCOOL glider applications</i> . PLOCAN Glider School. Gran Canaria, Spain	2015, 2016
<i>Mixing and phytoplankton dynamics in Antarctica's coastal seas</i> . University of East Anglia, UK	2016
<i>Using gliders to map phytoplankton dynamics in submarine canyons</i> . Teledyne Webb Research, USA	2015

### ORAL PRESENTATIONS and POSTERS (selected, <sup>(P)</sup>=poster)

<i>Biological Carbon Pump through the "eyes" of multiple high-resolution gliders</i> , Ocean Sciences, US	2020
<i>Mapping Antarctic phytoplankton physiology using autonomous gliders</i> . Ocean Optics XXIV, Croatia	2018
<i>Coupled physical and phytoplankton dynamics in Antarctic coastal seas</i> . GRC Polar Marine Science <sup>(P)</sup>	2017
<i>Mixing and phytoplankton dynamics in Antarctica's coastal seas</i> . XXXIV SCAR OSC, Malaysia	2016
<i>Impact of canyon dynamics on the spring phytoplankton bloom</i> . Ocean Optics XXII, USA	2014

### STUDENT SUPERVISION

Benoit Espinola (U. Southampton, PhD 2019-Present), Sarah Cryer (U. Southampton, PhD 2018-Present), Evelyn Byer (U. Southampton, MSc 2018).

### RELEVANT RESEARCH EXPERIENCE/WORKSHOPS

Introduction to Python for oceanographers, Ocean Obs'19, Honolulu, HI, USA	2019
IOCCP/Bonus-Integral International training course on a suite of biogeochemical sensors, Sweden	2019
PLOCAN Glider School, Spain	2015-2016
COSEE Gears Professional Development Workshop for Early Career Scientists, OSM, Hawaii	2014
5 <sup>th</sup> ESA/ENVISAT Earth Observation Summer School Earth System Monitoring & Modelling, ESA, Italy	2010

### RELEVANT TEACHING EXPERIENCE

Invited Lecturer (University Southampton 2017, 2019; PLOCAN Glider School 2015-2016); Summer School Instructor (NOC 2018); Scientific Diving Instructor (Rutgers University 2016-2017); Teaching Assistant (Rutgers University 2015; University Azores, 2011); SCUBA Instructor (Rutgers University 2014-2017)

### COMMUNITY SERVICE INVOLVEMENT

NOC seminar coordinator (2019-2020); Outreach at Bluedot Festival, UK (2018, 2019) and Science Uncovered at Natural History Museum, UK (2017); POLAR-ICE Sci-I Workshop (2016); Association of Polar Early Career Scientists (APECS) Portugal Executive Committee (2015-2019); APECS Portugal outreach coordinator (2015-2017); 4-H Climate & Environmental Change Teen Summit, USA (2014-2017); Northeast Shore Bowl Science Judge, USA (2015-2017); Rutgers Oceanography Grad Student Association seminar coordinator (2013-2014); manuscript reviewer for *Journal of Geophysical Research: Oceans*, *Geophysical Research Letters*, *Scientific Reports*, *Limnology and Oceanography*, *Antarctic Science* and *Acta Oceanologica Sinica*.