

# Filipa Carvalho

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## RESEARCH INTERESTS

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

## EDUCATION

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2017 **PhD**, Oceanography, Rutgers University, United States.

2009 **MS**, Fisheries and Aquaculture, University of Lisbon, Portugal.

2007 **LIC** (Pre-Bologna), Environmental Marine Biology, University of Lisbon, Portugal

## PROFESSIONAL APPOINTMENTS

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2017- Present Postdoctoral Researcher, National Oceanography Centre (UK)

2011-2017 Graduate Teaching/Research Assistant/Postdoctoral Research Associate, Rutgers University (USA)

2009-2011 Research Assistant, Dept of Oceanography and Fisheries, Univ. Azores (PT)

## SELECTED PUBLICATIONS

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- **Carvalho, F.**, J. Fitzsimmons, N. Couto, N. Waite, M. Gorbunov, J. Kohut, M.J. Oliver, R. Sherrell, O. Schofield, 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*,
- Oliver, M, J Kohut, K Bernard, W Fraser, P Winsor, H Statscewich, E Fredj, M Cimino, D Patterson-Fraser, and **F Carvalho**. Central place foragers select ocean surface convergent features despite differing foraging strategies, *Scientific Reports*, 9(1), 157 (2019)
- Laber, C, J Hunter, **F Carvalho**, J Collins, B Schieler, E Boss, K More, M Frada, K Thamatrakoln, C Brown, L Haramaty, J Ossolinski, H Fredricks, U Sheyn, Y Lehahn, A Martins, M Coolen, A Vardi, G DiTullio, B Van Mooy, and K Bidle. Coccolithovirus stimulation of carbon export in the North Atlantic. *Nature Microbiology*, 3(5), 537-547 (2018).
- **Carvalho, F.**, J Kohut, M Oliver, and O Schofield. Defining the ecologically relevant mixed-layer depth for Antarctica's coastal seas, *Geophys. Res. Lett.*, 44, 338–345 (2017)
- 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. Decadal variability in coastal phytoplankton community composition in a changing West Antarctic Peninsula, *Deep Sea Res Part 1 Oceanogr Res Pap*, 124, 42-54 (2017)
- Kohut, J, A Kustka, M Hiscock, P Lam, C Measures, A Milligan, A White, **F Carvalho**, M Hatta, B Jones, D Ohnemus, J Swartz. Mesoscale variability of the summer bloom over the northern Ross Sea shelf: A tale of two banks, *Journal of Marine Systems*, 166, 50-60 (2017)
- **Carvalho, F.**, J Kohut, M Oliver, R Sherrell, and O Schofield. Mixing and phytoplankton dynamics in a submarine canyon in the West Antarctic Peninsula, *J. Geophys. Res. Oceans*, 121, 5069–5083 (2016)
- **Carvalho, F.**, J Kohut, M Gorbunov, O Schofield, and M Oliver. Mapping Antarctic phytoplankton physiology using autonomous gliders. OCEANS 2016 MTS/IEEE Monterey (2016)
- Yi, X, S Glenn, **F Carvalho**, C Jones, J Kohut, J McDonnell, T Miles, G Seroka, O Schofield. Chapter 8 - Glider Technology Enabling a Diversity of Opportunities with Autonomous Ocean Sampling. In E Delory & J Pearlman (Eds.), *Challenges and Innovations in Ocean in Situ Sensors* (pp. 367-374): Elsevier (2019)

## SELECTED INVITED SEMINARS

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- *Variability in the biological carbon pump: the GOCART and COMICS projects*. CSIR, South Africa (2018)
- *Coupled physical and phytoplankton dynamics in Antarctic coastal seas*. National Oceanography Centre, UK (2017)
- *Mixing and phytoplankton dynamics in Antarctica's coastal seas*. British Antarctic Survey, UK (2016)
- *RUCOOL glider applications*. PLOCAN Glider School. Gran Canaria, Spain (2015, 2016)
- *Mixing and phytoplankton dynamics in Antarctica's coastal seas*. University of East Anglia, UK (2016)
- *Using gliders to map phytoplankton dynamics in submarine canyons in the WAP*. Teledyne Webb Research, USA (2015)
- Impact of canyon dynamics on the spring phytoplankton bloom (WAP). Rutgers University, USA (2014)

## STUDENTS

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

## **FELLOWSHIPS, AWARDS, and HONORS**

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Ocean Obs'19 Travel Grant (2019), Graduate School of New Brunswick Travel Grant Award (2017), NSF SCAR OSC Travel Grant Award (2016), Teledyne Marine Graduate Research Fellowship (2015 – 2017), Doctoral Grant, Foundation for Science and Technology, Portugal (2011 - 2015), Antarctic Service Medal (2011), EMS Young Scientist Travel Award, European Meteorological Society (2010), Saldanha/Tenore Fellowship, Luso-American Foundation, FLAD (2009)

## **SELECTED PRESENTATIONS and POSTERS (P=poster)**

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- Understanding the Biological Carbon Pump from high resolution glider measurements. Ocean Obs'19. USA, 2019 (P)
- Insights on the Biological Carbon Pump from high-resolution glider measurements. *8<sup>th</sup> EGO Meeting and International Glider Workshop*. USA, 2019
- Mapping Antarctic phytoplankton physiology using autonomous gliders. *Ocean Optics XXIV*. Croatia, 2018
- Coupled physical and phytoplankton dynamics in Antarctic coastal seas. *Polar Marine Science GRC/GRS*. USA, 2017 (P)
- Mixing and phytoplankton dynamics in Antarctica's coastal seas. *XXXIV SCAR Open Science Conference*. Malaysia, 2016.
- Impact of canyon dynamics on the spring phytoplankton bloom. *Ocean Optics XXII*. USA, 2014

## **PROJECTS**

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BIARRITZ (co-PI, 2018-2020), GOCART (2017-2022), COMICS (2017-2021), CUSTARD (2018-2021), PAL-LTER (2011-2017), CONVERGE (2014-2017), MESOHUX (2017), NA-VICE (2012-2013), SEAFAReRS (2011-2012), CONDOR (2009-2011), CIMBA (2009-2011), Scarlet Knight glider (2009)

## **CRUISE and FIELD WORK**

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7 cruises (3+ weeks long) in the North and South Atlantic, Benguela, Southern Ocean, West Antarctic Peninsula, Ross Sea; scientific diver/lead diver on multiple projects; glider ops from small and large vessels for multiple projects (deployments in Azores, Mid Atlantic Bight, Southern Ocean, West Antarctic Peninsula, Ross Sea, Benguela,

## **RELEVANT TEACHING EXPERIENCE**

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

## **RELEVANT RESEARCH EXPERIENCE/WORKSHOPS**

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Introduction to Python for oceanographers, Ocean Obs'19, Honolulu, HI, USA (2019); International training course on a suite of biogeochemical sensors, Sweden (2019); COSEE Gears Professional Development Workshop for Early Career Scientists, Ocean Sciences, Hawaii, USA (2014); 5<sup>th</sup> ESA/ENVISAT Earth Observation Summer School on Earth System Monitoring & Modelling, European Space Agency, Italy (2010)

## **COMMUNITY SERVICE INVOLVEMENT**

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National Oceanography Centre seminar coordinator (2019-2020); Bluedot Festival, UK (2018, 2019); Science Uncovered, UK, (2017); POLAR-ICE Sci-I Workshop (2016); Association of Polar Early Career Scientists (APECS) Portugal, Executive Committee member (2015-2019); APECS Portugal outreach coordinator (2015-2017); 4-H Climate & Environmental Change Teen Summit, NJ (2014-2017); Shore Bowl volunteer (2015-2017); Rutgers Oceanography Graduate Student Association seminar coordinator (2013-2014); manuscript reviewer for multiple oceanography journals.

## **CERTIFICATIONS:**

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AAUS Scientific Diver (2017), PADI Open Water Scuba Instructor (2016), Emergency First Responder (EFR) Instructor (2016), DAN Diving First Aid for Professional Divers (2015), Ocean Skipper (Yachtman's License), IPTM, Portugal (good until 2035), Certificate of Proficiency in English, ESOL Examinations, Cambridge University (2005)