Personal Data

Name	Katherine Amorim	**Birthday**	24.08.1988
Email	kathyamorimbio@gmail.com	**Birthplace:**	Sao Joao da Boa Vista, Brazil
Address	Riviera avenue, 28	**Citizenship**	Italian
	06500 Menton, France	**Phone:**	(+49) 178.3766.462
Researchgate	researchgate.net/profile/Katherine-Amorim		

Education

2023 – current **Post Doc Research Associate in Coral Ecophysiology**
Centre Scientifique de Monaco, Monaco
Focus: Corals ecophysiological responses to trace metals exposition.
Principal investigators: Christine Ferrier-Pages (Centre Scientifique de Monaco) and Renaud Grover (Centre Scientifique de Monaco)

2019 – 2022 **Ph.D. in Marine Biology**
Leibniz Institute for the Baltic Sea Research, Rostock University, Germany
Focus: Biological Oceanography
Advisors: Michael L. Zettler & Heide Schulz-Vogt (Leibniz Institute for Baltic Sea Research)
Thesis: Gradients and instability: Ecology of the macrozoobenthic communities at the Benguela Upwelling System off Namibia (submitted).

2015 – 2016 **Post-graduation course in Observational Oceanography**
Alfred-Wegener-Institute (Helgoland, Germany)
Focus: core skills, modelling, remote sensing, ocean-atmosphere interactions
Advisor: Cedric Meunier (Alfred Wegener Institute for Polar and Marine Research, Helgoland)

2013 – 2015 **M.Sc. in Ecohydrology**
Erasmus Mundus Master of Science in Ecohydrology, University of Algarve (Faro, Portugal) and Christian-Albrechts-Universität zu Kiel (Kiel, Germany)
Focus: Management of aquatic ecosystems
Thesis: The effect of freshwater pulses on *Aurelia aurita* (Linnaeus 1758) (Cnidaria: Scyphozoa): an ecohydrological solution for controlling jellyfish blooms (Thesis grade: 90%).
Advisor: Maria Alexandra Teodósio (Centre of Marine Sciences, University of Algarve, Portugal).

2007 – 2011 **B.Sc. in Biological Sciences**
Institute of Biosciences of University of São Paulo (São Paulo, Brazil)
Focus: Biology
Thesis: Localization of p27 protein in gastric epithelium (Thesis grade: 90%).
Advisor: Patrícia Gama (Institute of Biomedical Sciences, University of São Paulo, Brazil).

Professional Experience

2017 – 2018 **Environmental Analyst at the Environmental Agency of São Sebastião Municipality (São Sebastião, Brazil)**
Description: Administration and execution of a meteorological and hydrological monitoring project of four sub-river basins. Execution of a project on mapping potential marine aquaculture sites.

10.2016 **Volunteer laboratory assistant at GEOMAR - Helmholtz Centre for Ocean Research Kiel (Kiel, Germany)**
Description: Assistance on laboratorial sorting of gravel macrofauna and setting a mesocosmos experiment within the scope of the doctoral thesis of M.Sc. Maysa Ito – "Effects of environmental changes on ecosystem services provided by macroalgae and associated biota."

09.2014 **Volunteer laboratory assistant in the Geologic Oceanography Lab of Federal University of Espírito Santo, Vitória (Vitória, Brazil)**
Description: Internship in identification of rhodolith associated fauna of the Brazilian coast. Supervision: Prof. Alexandre Bastos, Dr. Leila Longo.

2013 **Internship in CETESB (Environmental Agency of the State of São Paulo) (São Sebastião, Brazil)**.
Description: Internship on environmental licensing.

2013 **Field assistant in the South America Research Group on Coastal Ecosystems at the Center for Marine Biology of University of São Paulo (São Sebastião, Brazil)**
Description: Field sampling along the Brazilian southern coast to study the biodiversity patterns and ecosystem functioning of intertidal rocky shores at a continental scale. Supervision: Prof. Augusto Flores.

01.2013 **Volunteer coordinator of the environmental education activity "Natural Aquarium" (Ubatuba, Brazil)**
Description: Coordination of the environmental education activity "Natural Aquarium" on rocky shores of Anchieta island, at the Trilha Sub Environmental Education Project. Instituto de Biociências – University of São Paulo. Supervision: Prof. Flávio Berchez.

2012 **Volunteer laboratory assistant in Department of Ecology and Evolutionary Biology of Toronto University (Toronto, Canada)**
Description: Technical assistant to a project on frequency-dependent selection in guppies and a study of the effects of pharmaceutical drugs on behavior and epigenetics of guppies. Supervision: Prof. Helen Rodd.

01.2012 **Volunteer coordinator of the environmental education activity "Natural Aquarium" (Ubatuba, Brazil)**
Description: Coordination of the environmental education activity "Natural Aquarium" on the rocky shores of Anchieta island in the scope of Trilha Sub Environmental Education Project. Instituto de Biociências - University of São Paulo. Supervision: Prof. Flávio Berchez.

08.2011 **Undergraduate instructor at the 5th USP Careers Fair Centre of Marine Biology – University of São Paulo (São Paulo, Brazil)**
Description: Presentation of the marine biology career to high school students.

01.2011 **Volunteer coordinator of the environmental education activity "Natural Aquarium" (São Sebastião, Brazil)**
Description: Coordination of the environmental education activity "Natural Aquarium" on rocky shores of Praia Grande beach, at the Trilha Sub Environmental Education Project. Instituto de Biociências - University of São Paulo. Supervision: Prof. Flávio Berchez.

2011 – 2012 **Internship and undergraduate researcher in Center for Marine Biology of University of São Paulo (São Sebastião, Brazil)**
Description: I carried out two research projects about the trophic ecology of rocky shores and assisted the lab and fieldwork of a project about the recruitment of rocky shore ecosystems and experiments on feeding behavior of *Stramonita haemastoma*. Supervision: Dr. Maria Soledad López. CNPq fellowship.

Project 1 (2011): Trophic cascades and anti-predator behavior: Effect of the type of prey on feeding behavior of *Stramonita haemastoma*.
Project 2 (2012): Defenses induced by predator presence: morphology of shell and anti-predator behavior of *Stramonita haemastoma*.

01.2010 **Volunteer instructor of environmental education (São Sebastião, Brazil)**
Description: I did an internship in the activity "Trail of ecosystems" in Anchieta Island, Ubatuba, (Brazil). Supervision: Prof. Flávio Berchez (Instituto de Biociências - University of São Paulo).

2009 – 2010 **Undergraduate researcher in Biomedical Sciences Institute of University of São Paulo (São Paulo, Brazil)**
Description: I developed an immunohistochemistry protocol in the project "Distribution of p27 protein in lactant rats epithelium treated with TGF beta". Supervision: Prof. Patrícia Gama, Dr. Eunice Sá. CNPq fellowship.

Scholarships and Grants

05.2019	RGNO Workshop grant
11.2016	NF-POGO grant – NOSOAT Cruise 2016
2015 – 2016	NF-POGO grant – observational oceanography training course
2013 – 2015	European Commission scholarship – Erasmus Mundus Masters in Science of Ecohydrology
2011 – 2012	CNPq (National Center for research and technology development) and Santander scholarship – scientific initiation
2009 – 2010	CNPq (National Center for Research and Technology Development) scholarship – scientific initiation

Peer-reviewed scientific articles

5. **Amorim K***, Zettler ML (2023) Gradients and instability: Macrozoobenthic communities in the Benguela Upwelling System off Namibia. **Estuarine, Coastal and Shelf Science.**

The most comprehensive study on macrozoobenthic communities' distribution in the Namibian oxygen minimum zone, and the first to employ interseasonal oxygen variability and hydrogen sulphide fluxes as environmental predictors. I wrote the paper, I designed a way to

analyse the environmental forces structuring macrofaunal communities (distlm, ArcGIS), I analysed communities' structure with my supervisor (ANOSIM, SIMPER). I communicated the results at the CUSCO/EVAR/REEBUS Status Meeting.

Impact factor: 2,93 H-index: 142 Citations: 1

4. **Amorim K***, Loick-Wilde N, Yuen B, Osvatic, J T , Wäge -Recchioni J, Hausmann B, Petersen, J M , Fabian J, Wodarg D, Zettler L M (2022) Chemoautotrophy, symbiosis and sedimented diatoms support high biomass of benthic molluscs in the Namibian shelf. **Scientific Reports.** https://www.nature.com/articles/s41598-022-13571-w

Impact factor: 4,54 H-index: 242 Citations: 4

Symbionts of lucinids, the most known symbiotic bivalves' family, were believed to use dinitrogen as their main nitrogen source. We now know that those symbionts rather assimilate ammonium when inhabiting ammonium abundant oxygen minimum zones. This study also importantly contributes for understanding bentho-pelagic coupling in upwelling systems. I wrote the paper, I created the novel hypothesis, I sampled and carried out experiments, I organized the participation of other researchers, I partly processed samples and carried out data analysis (Bulk and Compositional stable isotopes analysis, RNA sequencing and nutrient fluxes data), I merged all the information in one history. I communicated the results at the CUSCO/EVAR/REEBUS Status Meeting.

3. **Amorim K**, Piontkivska H, Zettler ML, Sokolov E, Hinzke T, Nair A M, Sokolova IM (2021) Transcriptional response of key metabolic and stress response genes of a nuculanid bivalve, *Lembulus bicuspidatus* from an oxygen minimum zone exposed to hypoxia-reoxygenation. **Comparative Biochemistry and Physiology Part B: Biochemistry and Molecular Biology 256: 110617**. doi: 10.1016/j.cbpb.2021.110617.

Impact factor: 2,32 H-index: 104 Citations: 11

This study contributes for understanding the underexplored physiological responses to oxygen variability in organisms of oxygen minimum zones. I wrote the paper, I sampled and carried out experiments, I partly processed samples (qPCR), I partly analysed data. I communicated the results at the CUSCO/EVAR/REEBUS Status Meeting.

2. **Amorim K**, Mattmüller R, Algueró-Muñiz M, Meunier CL, Alvarez-Fernandez S, Boersma M, Morais P, Teodósio MA (2018) Winter river discharge may regulate summer estuarine jellyfish blooms. **Marine Ecology Progress Series 591: 253-265.** doi: 10.3354/meps12356.

Impact factor: 2,65 H-index: 198 Citations: 22

The first study showing a relationship between estuarine jellyfish abundances and freshwater pulses, joined with ecophysiological responses of early life stages of jellyfish to salinity

variability. I wrote the paper, I conduct part of the experiments, I partly analyzed the data (QGIS, R). I communicated the results at the Jellyfish Bloom Symposium 2016.

1. Seyer T, Morais P, **Amorim K**, Leitão F, Martins F, Teodósio MA (2017) On the presence of the Ponto-Caspian hydrozoan *Cordylophora caspia* (Pallas, 1771) in an Iberian estuary: highlights on the introduction vectors and invasion routes. **BioInvasions Records** 6: 331-337. doi: 10.3391/bir.2017.6.4.05.

Impact factor: 1,76 H-index: 22 Citations: 6

I discovered the invasion of the Ponto-Caspian hydrozoan *Cordylophora caspia* at negative geotaxis in artificial substrate in the Guadiana estuary.

Oral and Poster Presentations

5. **Oral Presentation** Amorim K, Zettler ML (2022) Macrozoobenthic biodiversity and symbiosis in an oxygen minimum zone (OMZ). Joint Annual Meeting CUSCO / EVAR / REEBUS (Kiel, Germany). March 2022.
4. **Oral Presentation (online)** Amorim K, Zettler ML (2022) Biodiversity and adaptations of macrozoobenthic species in the Namibian shelf. Alumni Forum of the Regional Graduate Networks of Oceanography (RGNOs) Symposia & Seminars (Henties Bay, Namibia). April 2022.
3. **Oral Presentation** Amorim K, Zettler ML (2020) Biodiversity and adaptations of macrozoobenthic species in the Namibian oxygen minimum zone. CUSCO / EVAR / REEBUS Status Meeting (Kiel, Germany). December 2020.
2. **Oral Presentation**Amorim K, Teodósio MA (2016) Can river flow management prevent estuarine jellyfish blooms? 5th Jellyfish Bloom Symposium (Barcelona, Spain). May 2016.
1. **Poster Presentation** Amorim K, López MS (2011) Trophic cascades and anti-predator behavior: effects of the type of prey on feeding behavior of *Stramonita haemastoma*. International Symposium of Scientific Initiation (Ribeirão Preto, Brazil). November 2011.

Reviewer

1. Marine Environmental Research (2020).

Scientific Cruises

02.2022 **Leibniz Institute for Baltic Sea Research (Rostock, Germany)**
Cruise (MSM105) on board of RV Maria S. Merian to collect macrozoobenthos by deploying multicores, dredges, grabs, box cores, and landers in several stations along a wide latitudinal (18°-27° S) and depth (30-2000 m) ranges. I also carried out experiments with anoxia exposure, metabolic rates measurements of benthic species, and nutrient fluxes in sediment core incubations.

09.2019 **Leibniz Institute for Baltic Sea Research (Rostock, Germany)**
Cruise (M157) on board of RV Meteor to collect macrozoobenthos by deploying multicores, dredges, grabs, box cores, and landers in several stations along a wide latitudinal (17°-25° S) and depth (30-2000 m) ranges. I also carried out experiments with anoxia exposure, metabolic rates measurements of benthic species, and nutrient fluxes in sediment core incubations.

05.2019 **University of Namibia's Sam Nujoma Marine Research Center and Namibia's National Marine Information and Research Center (Henties Bay and Swakopmund, Namibia)**
Cruise on board of RV Mirabilis to collect water and sediment samples from the shelf of the Benguela Upwelling System (Namibia) during the RGNO Workshop.

04.2019 **Leibniz Institute for Baltic Sea Research (Rostock, Germany)**
Cruise (EMB211) on board of RV Elisabeth Mann Borgese in the Baltic Sea to collect macrozoobenthos for the LEGRA (Live along the gradient') Project.

11.2016 **Alfred-Wegener-Institut (Bremerhaven, Germany)**
Cruise (PS102) on board of RV Polarstern – Participation of North South Atlantic Transect – during a training course focused on ocean and atmospheric interactions. We deployed multiple devices (Niskin bottles, CTD, XPT, underway CTD, radio sonar, Lidar, Ramses) and analyzed multiple satellite images for measuring various oceanic and atmospheric parameters and perform data analysis. The course also included Marine International Governance studies and Artistic Aspects of Ocean Sciences. The cruise started at Bremerhaven, Germany, and finished at Cape Town, South Africa.
Group Final Work: Large scale global circulation and their implications for climate change: A west African monsoon case study.

Courses

05.2021 **Course "The art of loving", The Psychoanalysis of Christian Dunker (Online, 12 hours)**
Casa do Saber (São Paulo, Brazil)

05.2021 **PERMANOVA+ Workshop (Online, 40 hours)**
Massey University (Auckland, New Zeland)

02.2021 **Primer 7 with PERMANOVA+ Workshop (Online, 40 hours)**
Massey University (Auckland, New Zeland)

05.2019 **RGNO Research Discovery Camps Workshop (192 hours)**
Training on specialized oceanographic topics and inspire participants to advance scientific research in the Namibian Upwelling system. Hands-on work on a research vessel at sea, instruction in the classroom, and work in the laboratory.
University of Namibia's Sam Nujoma Marine Research Center and Namibia's National Marine Information and Research Center (Henties Bay and Swakopmund, Namibia)

09.2018 **Summer School – "Coastal dynamics - consequences for coastal protection and ecology" (80 hours)**
Geological development of the Baltic Sea, its natural coastal dynamics for coastal protection measures, biogeochemical processes, ecological characteristics, and reinstatement measures for coastal habitats.
Leibniz-Institut für Ostseeforschung Warnemünde (Hiddensee, Germany)

09.2018 **Summer School – "Operational Oceanography for Science, Business and Society" (60 hours)**
Modules on Introduction to Operational Oceanography, Introduction to the Odyssea Platform, Copernicus Marine Environmental Monitoring Service, Satellite Data Analysis, Modern Marine Instrumentation and Sensors, Operational Numerical Models.

	Democritus University of Thrace (Kavala, Greece)
07.2018	**Workshop – "Culturing and monitoring Marine Algae" (16 hours)**
	University of São Paulo and Fishing Institute (Ubatuba, Brazil)
03.2018	**Course of onboard guide in the Alcatrazes Marine Conservation Area (16 hours)**
	Chico Mendes Institute for Biodiversity Conservation, Environmental Ministry (São Sebastião, Brazil)
07.2017	**Structuring Geodatabases – Arc GIS (24 hours)**
	GIS Academy (São José dos Campos, Brazil)
03.2017	**Introduction to ArcGIS 1-2 (40 hours)**
	GIS Academy (São Paulo, Brazil)
10.2016	**Workshop on Compositional Data Analysis. Practical lecturers in R (16 hours)**
	Alfred-Wegener-Institut (Bremerhaven, Germany)
09.2008	**Course – "Biodiversity and ecology of coral reef ecosystem" (8 hours)**
	Lecturer: Prof. Fernanda Duarte Amaral (Federal Rural University of Pernambuco). Instituto de Biociências - USP (São Paulo, Brazil)

Conferences

6. I National Meeting of Municipality Management. March 2018. São Paulo, Brazil.

5. Talks Cycle: Atlantic Forest and Climate Change. November 2017. Núcleo São Sebastião do Parque Estadual Serra do Mar. São Sebastião, Brazil.

4. Seminar of São Sebastião Land Use Regularization. September 2017. São Sebastião, Brazil.

3. 15th Water Information Summit. July 2014. Itaipu Technological Park, Foz do Iguaçu, Brazil.

2. Symposium "Ecohydrology, Biotechnology and Engineering: towards harmony between the biosphere and society on the basis of long-term ecosystem research". November 2013. Lodz, Poland.

1. IX Biofouling, Benthic Ecology and Marine Biotechnology Meeting. July 2011. Arraial do Cabo, Brazil.

Accomplishments

1. Collaboration on updating the Environmental Atlas of São Sebastião Municipality (2018). https://issuu.com/atinaedu/docs/atlas_sao_sebastiao_3aed

Additional Skills

Languages	**Portuguese**	native language
	English	proficient
	Italian	good
	Spanish	average
	German	average
Techniques	Optical oxymeter, gas and nutrients incubation chambers with labeled isotopes, taxonomic identification keys, current meter, qPCR, CTD.	
Advanced Software	R (glm, glme, random forest), Inskape, Arc GIS, QGis, Visat Beam, Primer (Hierarchical cluster analysis, ANOSIM, SIMPER, distlm)	
Diving certificates	Advanced Open Water Diver GUE Explorer Scientific Diving Rescue Diving	