

Pedro Ciarlini Junger, MSc.

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Higher Education

2018-2022 PhD in Ecology and Natural Resources (in progress)

Federal University of São Carlos, UFSCar, São Carlos-SP, Brazil

Thesis title: "Ecological Processes Structuring the Global Ocean Picoplankton Communities Across Space, Time and Depth"

Supervisor: Dr. Hugo Sarmento

2020-2021 PhD visiting student

Institute of Marine Sciences, ICM-CSIC, Barcelona, Spain

1-year stay in the log[lab] of the Ecology of Marine Microorganisms Research Group

Supervisors: Dr. Ramiro Logares and Dr. Josep M. Gasol

2014-2016 Masters in Ecology

Federal University of Rio de Janeiro, UFRJ, Rio de Janeiro-RJ, Brazil

Dissertation title: "The Ecological Role of Virus in Tropical Coastal Lagoons"

Supervisor: Dr. Vinicius F. Farjalla

2012-2013 Undergraduate visiting student in Physical Geography

University of Bristol, Bristol, UK

Dissertation Title: "Virus-Bacteria Interaction and its Sensibility to Temperature and Nutrient Conditions in Cryoconite Holes"

Supervisor: Dr. Alexandre M. Anesio

2007-2012 Bachelor's in Ecology

Federal University of Rio Grande do Norte, UFRN, Natal-RN, Brazil

Dissertation Title: "Prevalence of Heterotrophy over a Seasonal Scale in Tropical Semi-Arid Reservoirs"

Supervisor: Dr. André M. Amado

Publications

- Metz, S., Huber, P., Mateus-Barros, E., **Junger, P.C.** et al. 2022. A georeferenced rRNA amplicon database of aquatic microbiomes from South America. *Scientific Data* 9, 565. doi:10.1038/s41597-022-01665-z
- Gazulla, C.R., Auladell, A., Ruiz-González, C., **Junger, P.C.** et al. 2022. Global diversity and distribution of aerobic anoxygenic phototrophs in the tropical and subtropical oceans. *Environmental Microbiology* 24, 2222-2238. doi:10.1111/1462-2920.15835
- Chaffron, S., Delage, E., Budinich, M., Vintache, D., Henry, N., Nef, C., Ardyna, M., Zayed, A. A., **Junger, P. C.**, Galand, P. E., et al. 2021. Environmental vulnerability of the global ocean plankton community interactome. *Science Advances* 7(35), eabg1921. doi:10.1101/2020.11.09.375295
- Logares, R., Deutschmann, I. M., **Junger, P. C.** et al. 2020. Disentangling the mechanisms shaping the surface ocean microbiota. *Microbiome* 8, 55. doi:10.1186/s40168-020-00827-8

- **Junger, P. C.**, Almeida, R. M., Mendonça, R., et al. 2020. Not all viruses in nature are human enemies: a perspective on aquatic virus ecology in Brazil. *Acta Limnologica Brasiliensia* 32, e105. doi:10.1590/s2179-975x3720
 - Almeida, R.M., Hamilton, S.K., Rosi, E.J., Arantes, J.D., Barros, N., Boemer, G., Gripp, A., Huszar, V. L. M., **Junger, P. C.**, et al. 2019. Limnological effects of a large Amazonian run-of-river dam on the main river and drowned tributary valleys. *Scientific Reports* 9, 16846. doi:10.1038/s41598-019-53060-1
 - **Junger, P. C.**; Dantas, F. C. C.; Nobre, R. L. G.; Kosten, S.; Venticinque, E. M.; et al. 2019. Effects of Seasonality, Trophic State and Landscape Properties on CO₂ saturation in Low-Latitude Lakes and Reservoirs. *Science of the Total Environment*. doi:10.1016/j.scitotenv.2019.01.273
 - **Junger, P. C.**; Amado, A. M.; Paranhos, R.; Cabral, A. S.; Jacques, S. M.; Farjalla, V. F. 2018. Salinity Drives the Virioplankton Abundance but not Production in Tropical Coastal Lagoons. *Microbial Ecology*. doi:10.1007/s00248-017-1038-3
 - Cabral, A. S.; Lessa, M. M.; **Junger, P. C.**; Thompson F. L. and Paranhos, R. P. R. 2017. Virioplankton Dynamics are Related to Eutrophication Levels in a Tropical Urbanized Bay. *PLoS One*, 12:e0174653. doi:10.1371/journal.pone.0174653
 - Almeida, R. M.; Nóbrega, G. N.; **Junger, P. C.**; Figueiredo, A. V.; et al. 2016. High Primary Production Contrasts with Intense Carbon Emission in a Eutrophic Tropical Reservoir. *Frontiers in Microbiology*, 7:717. doi:10.3389/fmicb.2016.00717
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Presentations at conferences

- **Junger, P. C.** et al. 2021. "Niche-partitioning of *Rhodospirillaceae*, an ubiquitous, abundant and previously overlooked group of marine bacteria". (Oral presentation at the 3rd Workshop of the Latin American Network in Aquatic Microbial Ecology (μSudaqua), Florianópolis-SC, Brazil)
- **Junger, P. C.** et al. 2021. "Environmental heterogeneity and water mass variability influence ecological processes structuring picoplankton communities across ocean depths". (Oral presentation at the ASLO Aquatic Sciences Meeting)
- **Junger, P. C.** et al. 2020. "Ecological processes driving picoplankton community assembly across depth layers of the ocean". (Poster presentation at the ISME Virtual Microbial Ecology Summit)
- **Junger, P. C.** et al. 2019. "Ecological Processes Structuring Microbial Planktonic Communities in Contrasting Latitudinal Regions of the Global Ocean". (Poster presentation at the 2nd Workshop of the Latin American Network in Aquatic Microbial Ecology (μSudaqua), Chascomús, Argentina)
- **Junger, P. C.** et al. 2019. "High-level ecological processes driving microbial community structure in distinct depth layers of the global ocean". (Poster presentation at the ISME-LA Conference, Valparaíso, Chile)
- **Junger, P. C.** Sarmento, H.; 2018. "Structuring Processes of Microbial Communities and Ecological Networks in Latitudinal Gradients of the Global Ocean". (Oral presentation at the Ramon Margalef Summer Colloquium, Barcelona, Spain)
- **Junger, P. C.** et al. 2017. "Cytometric Signature of Pico- e Nanophytoplankton in

- Tropical Coastal Lagoons". (Poster presentation - 1st workshop of the Collaborative Network in Aquatic Microbial Ecology in Latin America - μ Sudaqua)
- **Junger, P. C.** et al. 2017. "Variação Sazonal de $p\text{CO}_2$ na Coluna d'água de Três Lagos de Várzea Amazônicos (Rio Madeira – RO)". (Poster presentation at the XVI Brazilian Limnology Conference)
 - **Junger, P. C.** et al. 2015. "Flushing Boosts Heterotrophy in Tropical Eutrophic Semi-Arid Reservoirs". (Oral presentation at the XV Brazilian Limnology Conference)
 - **Junger, P. C.** et al. 2013. "Virus-Bacteria Interactions in Extreme Aquatic Environments". (Poster presentation at the XIV Brazilian Limnology Conference)
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Research Experience

2020-2021– Visiting PhD student at [LogLab](#), [Ecology of Marine Microorganisms Research Group](#), [Institute of Marine Sciences](#) (ICM-CSIC), Barcelona, Spain.

2018-now – PhD candidate at [Laboratory of Microbial Processes and Biodiversity](#), UFSCar, Brazil.

2017– Researcher volunteer at Laboratory of Microbial Processes and Biodiversity, UFSCar, Brazil.

2014-2016 – Master's student at Laboratory of Limnology, UFRJ, Brazil.

2012-2013 – Intern at Low Temperature Experimental Facilities – LOWTEX, School of Geographical Sciences, University of Bristol, UK. ([LOWTEX](#))

2011-2012 – Intern at Laboratory of Limnology, UFRN, Brazil.

2010-2011 – Intern at Laboratory of Water Resources and Environmental Sanitation, UFRN, Brazil.

2010 – Intern at Laboratory of Aquatic Microbiology, UFRN, Brazil.

Fieldwork, Laboratory and Technical Skills

- Worked on board of TARA schooner in two legs (in Brazil and Africa) of the Mission Microbiomes as part of the AtlantECO project (<https://www.atlanteco.eu/>)
 - Fieldwork experience: water and sediment sampling and in-situ environmental measurements in both freshwater and marine ecosystems;
 - Laboratory experience: DNA extraction, PCRs, Agarose gel electrophoresis, Incubation experiments, Bacterial production (leucine and thymidine incorporation) and respiration measurements; Epifluorescence microscopy, Flow cytometry, Spectrophotometric analysis;
 - Data wrangling, analysis and visualization using R language;
 - Intermediate skills using Linux Command Shell
 - Maps and basic georeferencing skills using Q-GIS;
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Selected Courses and Meetings

2021 – Quantitative Ecological Genomics in the TARA Ocean, Ecole Normale Supérieure Paris, ENS/Paris, France (virtual version).

2019 – Microbial Diversity Course, Marine Biology Laboratory (MBL), Chicago University, Woods Hole, MA, USA.

2018 – Ramon Margalef Summer Colloquium: Ecology through the Omic Lens – Institute of Marine Sciences (ICM-CSIC), Barcelona, Spain.

2018 – Ecology and Diversity of Marine Microorganisms (ECODIM X) – Universidad de Concepción, Chile; Organized by Kurt Hanselmann (ETH Zürich, Switzerland), Rodrigo de la Iglesia (Pontificia Universidad Católica de Chile) and Osvaldo Ulloa (Universidad de Concepción, Chile)

2017 – 1er Taller de la Red Colaborativa en Ecología Microbiana Acuática en América Latina (μ SudAqua) – Centro Universitario del Este (CURE), Rocha, Uruguay

2015 – Data analysis and sharing using R and Github – Federal University of Rio de Janeiro, UFRJ, Brazil; Conducted by Andrew MacDonald (British Columbia University, Canada)

2015 – New Generation Methods in Microbial Ecology – Federal University of São Carlos, UFSCar, Brazil; Conducted by Hugo Sarmiento (UFSCar), Josep M. Gasol (ICM, Spain) and Fernando Unrein (IIB, Argentina)

2011 – Biogeochemistry of Aquatic Ecosystems – Federal University of Rio Grande do Norte; Conducted by James Cotner (Minnesota University, USA)

Teaching Experience

2022 – Instructor

Federal University of São Carlos, UFSCar, Brazil

Delivering practical classes on *Community Ecology Analysis* using R language as part of the course 'Analysis of Microbiomes'.

2019 – Organizer and instructor

Federal University of São Carlos, UFSCar, Brazil

Organized and taught the summer course 'Biological data wrangling and visualization using R language' for a group of 14 students

2015 – Tutor

Federal University of Rio de Janeiro, UFRJ, Brazil

Delivering practical sessions on methods in aquatic microbial ecology for courses in Aquatic Ecology for groups of up to 10 undergraduate students

2009 – Undergraduate teaching assistant

Federal University of Rio Grande do Norte, UFRN, Brazil

Undergraduate teaching assistant helping students in a Biochemistry course

Outreach and Scientific Communication

2021-2022 – Ocean science educator

TARA schooner, Mission Microbiomes portcalls

Participating in ocean science education and outreach activities in two TARA's portcalls in Rio de Janeiro-RJ and Itajaí-SC as part of the EU funded AtlantECO project (<https://www.atlanteco.eu/>)

2021-2022 – Science educator

Federal University of São Carlos, UFSCar, Brazil

Visiting public high schools to give speeches and interactive activities aimed at biological oceanography literacy, mainly focused on planktonic life.

2017-2018 – Science educator

Federal University of São Carlos, UFSCar, Brazil

Visiting public high schools to give speeches and interactive activities aimed at biological oceanography literacy, mainly focused on planktonic life.

2014-2016 – Blogger

Federal University of Rio de Janeiro, UFRJ, Brazil

Writing scientific outreach texts on microbial ecology for the general public in the Limnology Laboratory blogspot (<https://limnonews.wordpress.com/author/pcjunger/>)

2015 – Blogger

Federal University of Rio de Janeiro, UFRJ, Brazil

Worked in an scientific exposition on aquatic sciences for children and teenagers.

Grants and funding

FAPESP¹ Research Abroad Scholarship	(November 2020 – October 2021)
FAPESP¹ PhD's Scholarship	(April 2018 – March 2022)
CNPQ² Master's Scholarship	(March 2014 – February 2016)
CNPQ Science without Borders Scholarship	(August 2012 – July 2013)
CNPQ Scientific Initiation Scholarship	(August 2009 – October 2010)

1- FAPESP – São Paulo Research Foundation

2- CNPQ – Brazilian National Council for Scientific and Technological Development

Additional Professional Experience

Environmental Consultant at *Ecology and Environment do Brasil* – Environmental consultancy company (from September 2016 to September 2017). Work monitoring aquatic ecosystems and writing environmental impact reports. Statistical, fieldwork and laboratory skills were required.

President and Co-founder at *ECOSIN – Soluções Ambientais* (2011 – 2012). Environmental Consultancy Junior Start-up Company founded in the Federal University of Rio Grande do Norte (UFRN), Brazil. Teamworking, management and leadership skills were required.

Languages

Portuguese – Native Language

English – Speak fluently and read/write with high proficiency:

- IELTS proficiency test;
- 5 week Pre-sessional Course in English for Academic Purposes – Centre for English Language and Foundation Studies, University of Bristol, UK;
- Year Abroad at University of Bristol, UK

Spanish – Speak fluently and read/write with high proficiency

French – Basic reading, listening, speaking and writing