

# António Sousa | Curriculum Vitae

Instituto Gulbenkian de Ciência, Rua da Quinta Grande, 6, 2780-156, Oeiras

✉ agsousa@igc.gulbenkian.pt • 🌐 antonioggsousa.github.io

## Current Job Position

---

### Bioinformatics Unit

Bioinformatician

IGC

2019-2020

Instituto Gulbenkian de Ciência

## Work Experience

---

Projects.....

○ **NANOSED project** **CIIMAR-UP**  
*Research Fellow* *October 2018-October 2019*

- Project: NanoSed - Adsorption of metallic nanoparticles to estuarine sediments: what implication for denitrification?
- Reference: POCI-01-0145-FEDER-030131
- Funded by National Science Foundation of Portugal
- Work place: Interdisciplinary Centre of Marine and Environmental Research - University of Porto

○ **NITROLIMIT Project** **CIIMAR-UP**  
*Team Member* *2018-2022*

- Project: NITROLIMIT - Life at the edge: define the boundaries of the Nitrogen Cycle in the Extreme Antarctic Terrestrial Environments
- Reference: PTDC/CTA-AMB/30997/2017
- Funded by National Science Foundation of Portugal
- Work place: Interdisciplinary Centre of Marine and Environmental Research - University of Porto

○ **NITROnice II Project** **CIIMAR-UP**  
*Team Member* *2017-2018*

- Project: NITROnice II - Biogeochemistry of Nitrogen in the Arctic Ocean: Processes and Communities
- Funded by PROPOLAR, Portugal and Norwegian Polar Institute, Norway
- Work place: Interdisciplinary Centre of Marine and Environmental Research - University of Porto

- **NITRONice Project** **CIIMAR-UP**  
*Team Member* *2016-2017*
  - Project: NITRONice - Biogeochemistry of Nitrogen in the Arctic Ocean: Processes and Communities
  - Funded by PROPOLAR, Portugal and Norwegian Polar Institute, Norway
  - Work place: Interdisciplinary Centre of Marine and Environmental Research - University of Porto
  
- **MarRisk Project** **CIIMAR-UP**  
*Research Grant (BI)* *November 2017-September 2018*
  - Project: MarRisk - Coastal adaptation to climate change: understand the risks and increase the resilience
  - Reference: 0262\_MARRISK\_1\_E
  - Supported financially by the EP Program - INTERREG V A Espanha Portugal (POCTEC), through the European Regional Development
  - Work place: Interdisciplinary Centre of Marine and Environmental Research - University of Porto
  
- **Biometore Project** **CIIMAR-UP**  
*Team Member* *2016-2017*
  - Project: Biometore - biodiversity in seamounts: the Madeira-Tore and Great Meteor
  - Participation in the work package 3 - Characterization of the pelagic habitat
  - Reference: PT02-0018 (EEA Grant)
  - Work place: Interdisciplinary Centre of Marine and Environmental Research - University of Porto
  
- **Internship Course Unit - Biology Degree** **CIIMAR-UP**  
*Intern* *2014-2015*
  - Internship project: Comunidades microbianas endolíticas dos Desertos Gelados da Antártida: importância dos processos de reciclagem do azoto
  - Supervisors: Dra. Catarina Magalhães & Dr. Pedro Leão
  - Work place: Interdisciplinary Centre of Marine and Environmental Research - University of Porto
  - Final grade of the course unit: 19/20 (grade A on the European grading scale)
  
- Oceanographic Campaigns**.....
  
- **Kongsfjorden 2018** **Svalbard-Norway**  
*Research cruise* *July 2018*
  - Project: Environmental Monitoring of Svalbard and Jan Mayen - MOSJ-ICE18
  - Cruise ID: Kongsfjorden 2018
  - Place: Kongsfjorden (Kongsfjord, Svalbard)
  - Duration: 12nd July-17th July 2018

## ○ **Biometore 7 - Leg 1**

**Portugal**

○ *Research cruise*

*August-September 2016*

- Project: Biometore - biodiversity in seamounts: the Madeira-Tore and Great Meteor
- Reference: PT02\_Aviso2\_001, EEA Grants
- Cruise ID: Biometore 7 - Leg 1
- Place: Atlantic Ocean (between Lisbon-Funchal Madeira Island, Portugal)
- Duration: 16th August-8th September 2016

## Programming Skills

---

- **Programming Languages:** R, Python, Bash,  $\LaTeX$
- **GitHub repository:** <https://github.com/antonioggsousa>

## Professional Formation

---

### Academic Qualifications.....

#### ○ **P.G. Bioinformatics and Computational Biology - 24 ECTS**

**FCUP**

○ *Post-Graduation - Faculty of Sciences, University of Porto*

*2017-2018*

#### ○ **M.Sc. Cell and Molecular Biology**

**FCUP**

○ *Master's Degree - Faculty of Sciences, University of Porto*

*2015-2017*

- Thesis: Arctic microbiome and N-functions during the winter-spring transition
- Supervisors: Dr. Catarina Magalhães, Dr. Pedro Duarte & Dr. Luís Torgo
- Final grade: 19/20 (grade B on the European grading scale)

#### ○ **B.Sc. Biology**

**FCUP**

○ *Bachelor's Degree - Faculty of Sciences, University of Porto*

*2012-2015*

- Final grade: 15/20 (grade B on the European grading scale)

### Courses - instructor.....

#### ○ **Advanced Topics in Bioinformatics**

**Oeiras, Portugal**

○ *Master Class*

*24 March 2020*

- Class: *Advanced Topics in Bioinformatics* class to students from *Biochemistry for Health* master course - ITQB NOVA - Universidade NOVA de Lisboa
- Title: Practical introduction to the upstream and downstream data analysis of 16S rRNA gene amplicon data
- Place: Oeiras, Portugal

#### ○ **Microbiome visualization with Biome-Shiny**

**Oeiras, Portugal**

○ *BioData.pt Crash Course*

*31 January 2020*

- Title: BioData.pt Crash Courses: Microbiome visualization with Biome-Shiny
- Site: <https://igcbioinformatics.github.io/biomeshiniycourse/>
- Organized: BioData.pt & IGC Bioinformatics Unit (UBI-IGC)
- Place: Instituto Gulbenkian de Ciência, Oeiras, Portugal

## Courses - participant.....

- **Practical Statistics for the Life Sciences (PSLS20)** **Oeiras, Portugal**  
*Statistics Course* *20-24 January 2020*
  - Title: Practical Statistics for the Life Sciences (PSLS20)
  - Organized: The Gulbenkian Training Programme in Bioinformatics (GTPB)
  - Place: Instituto Gulbenkian de Ciência, Oeiras, Portugal
- **Integrative Biological Interpretation using Proteomics (IBIP19)** **Oeiras, Portugal**  
*Proteomics Course* *4-7 November 2019*
  - Title: Integrative Biological Interpretation using Proteomics (IBIP19)
  - Organized: The Gulbenkian Training Programme in Bioinformatics (GTPB)
  - Place: Instituto Gulbenkian de Ciência, Oeiras, Portugal
- **mARS Workshop** **Davos, Switzerland**  
*NGS & Metadata Course* *17-18 June 2018*
  - Title: Microbial Antarctic resource ecosystem (mARS) hands-on training workshop
  - Place: WSL Institute for Snow and Avalanche Research SLF, Davos, Switzerland
- **Blue and Green Workshop** **Porto, Portugal**  
*Genomics Course* *13-15 December 2016*
  - Title: Genomic applications in biotechnology (natural products)
  - Place: Interdisciplinary Centre of Marine and Environmental Research & Faculty of Sciences, University of Porto

## Publications

---

### Papers in Peer-Reviewed Journals.....

- Costa J, **Sousa AGG**, Carneiro AC, Mucha AP, Almeida MR, Magalhães C & Baptista MS. (2021) Copper nanoparticles prompt the activity of estuarine denitrifying bacterial communities at relevant environmental concentrations. *Environmental Science: Nano*. <https://doi.org/10.1039/D0EN01160F> (*accepted*)
- Paiva RA, **Sousa AGG**, Ramos CV, Ávila M, Lilue J, Paixão T & Martins VC. (2020) Self-renewal capacity of double negative 3 (DN3) early thymocytes preserves thymus autonomous function but compromises the -selection checkpoint. <https://www.biorxiv.org/content/10.1101/2020.06.09.142596v1> (*submitted*)

- Santos JP, **Sousa AGG**, Ribeiro H & Magalhães C. (2020) The response of estuarine ammonia-oxidizing communities to constant and fluctuating salinity regimes. *Frontiers in Microbiology*. <https://www.frontiersin.org/articles/10.3389/fmicb.2020.574815/abstract> (*provisionally accepted*)
- Antunes J, **Sousa AGG**, Azevedo J, Rego A, Leão P & Vasconcelos V. (2020) Distinct temporal succession of bacterial communities in early marine biofilms in a Portuguese Atlantic Port. *Frontiers in Microbiology*. <https://doi.org/10.3389/fmicb.2020.01938>
- Rego A, **Sousa AGG**, Santos JP, Pascoal F, Canário J, Leão PN & Magalhães C. (2020). Diversity of Bacterial Biosynthetic Genes in Maritime Antarctica. *Microorganisms*. <https://doi.org/10.3390/microorganisms8020279>
- Rego A, Raio F, Martins TP, Ribeiro H, **Sousa AGG**, Séneca J, Baptista MS, Lee CK, Cary SC, Ramos V, Carvalho MF, Leão PN & Magalhães C. (2019). Actinobacteria and Cyanobacteria diversity in terrestrial Antarctic microenvironments evaluated by culture-dependent and independent methods. *Frontiers in Microbiology*. <https://doi.org/10.3389/fmicb.2019.01018>
- **Sousa AGG**, Tomasino MP, Duarte P, Fernández-Méndez M, Assmy P, Ribeiro H, Surkont J, Leite RB, Pereira-Leal JB, Torgo L & Magalhães C. (2019). Diversity and Composition of Pelagic Prokaryotic and Protist Communities in a Thin Arctic Sea-Ice Regime. *Microbial Ecology*. <https://doi.org/10.1007/s00248-018-01314-2>
- Ribeiro H, de Sousa T, Santos J, **Sousa AGG**, Teixeira C, Monteiro M, Salgado P, Mucha AP, Almeida CMR, Torgo L & Magalhães C. (2018). Potential of dissimilatory nitrate reduction pathways in polycyclic aromatic hydrocarbon degradation. *Chemosphere*, 199, 54-67. <https://doi.org/10.1016/j.chemosphere.2018.01.171>

#### Book Chapters.....

- Ribeiro H, Santos JP, **Sousa AGG**, Salgado P, Tomasino MP, Baptista M & Magalhães C. (2020) Aerobic ammonia-oxidising prokaryotes: a perception of their niche segregation across estuarine salinity gradients. In: De Sousa T (Eds.), *Global implications of the Nitrogen cycle*. Cambridge Scholars Publishing, Newcastle, UK, 450p. Print ISBN-13: 978-1-5275-5513-6; Online ISBN-10 1-5275-5513-5.

#### Oral Presentations.....

- Costa J, **Sousa AGG**, Carneiro AC, Almeida M., Magalhães C & Baptista MS. *Evaluation of the denitrification efficiency of estuarine sediments exposed to Cu nanoparticles*, 24th European Nitrogen Cycle Meeting, 13<sup>rd</sup> September 2019, Lisboa, Portugal
- Lage OM, Calisto R, **Sousa AGG**, Øvreås L, Fernandez-Guerra A & Magalhães C. *Global Planctomycetes distribution and diversity based on the Ocean Sampling Day data set*, PVC IV Conference 2019, 27-29<sup>th</sup> May 2019, Radboud University, Nijmegen, Netherlands
- Rego A, Santos J, **Sousa AGG**, Fernandez-Guerra A, Leão PN & Magalhães C. *Diversity of bacterial biosynthetic genes across Fildes Bay, King George Island, Polar & Alpine Microbiology*

2019 Conference, 7<sup>th</sup> February 2019, University of Waikato, Hamilton, New Zealand

- Magalhães C, **Sousa AGG**, Tomasino MP, Portugal B, Baptista M, Santos JP, Leite RB, Assmy P, Torgo L & Duarte P. *Biogeography of Arctic microbial nitrogen-cycling traits in the Svalbard shelf*, Polar & Alpine Microbiology 2019 Conference, 7<sup>th</sup> February 2019, University of Waikato, Hamilton, New Zealand
- Ribeiro H, de Sousa T, Santos J, **Sousa AGG**, Teixeira C, Monteiro M, Salgado P, Mucha AP, Almeida CMR, Torgo L & Magalhães C. *The potential involvement of dissimilatory nitrate reduction pathways in polycyclic aromatic hydrocarbon degradation*, Symposium Novel Anaerobes, 10<sup>th</sup> November 2017, Braga, Portugal
- **Sousa AGG**, Tomasino MP, Duarte P, Fernández-Méndez M, Assmy P, Ribeiro H, Surkont J, Leite R, Leal JP, Torgo L & Magalhães C. *The Arctic microbial communities during the winter-spring transition north of Svalbard: diversity and nitrogen cycling functional genes*, 9<sup>a</sup> Conferência Portuguesa de Ciências Polares, 7<sup>th</sup> November 2017, Covilhã, Portugal
- **Sousa A**, Duarte P, Assmy P & Magalhães C. *Shifts in ammonia-oxidizing thaumarchaeotes during the winter-spring transition in the Arctic Ocean*, 9<sup>a</sup> Edição Investigação Jovem na Universidade do Porto, 8<sup>th</sup> February 2017, Porto, Portugal
- **Sousa A**, Monteiro M, Ramos V, Leão P, Lee C, Cary C & Magalhães C. *How nitrogen is recycled in cryptoendolithic communities of Antarctic deserts?*, 9<sup>a</sup> Edição Investigação Jovem na Universidade do Porto, 17<sup>th</sup> February 2016, Porto, Portugal

#### Poster Presentations.....

**Sousa AGG**, Costa J, Carneiro AC, Almeida M., Magalhães C & Baptista MS. *Denitrifying microbial communities activity enhanced by Cu nanoparticles exposure in a temperate estuary*, Symposium of Aquatic Microbial Ecology (SAME) 16, 3<sup>rd</sup> September 2019, University Potsdam, Potsdam, Germany

Carneiro ACGB, **Sousa AGG**, Costa J, Magalhães C & Baptista MS. *Response of denitrifying microorganisms to the increase of copper nanoparticles: case study of the Douro Estuary*, IJUP19, 14<sup>th</sup> February 2019, Porto, Portugal

Santos JP, **Sousa A**, Ribeiro H, Padeiro A, Canário J & Magalhães C. *Anthropogenic impact on soil prokaryotic communities of Fildes Peninsula*, POLAR2018 - Open Science Conference OSC, 22<sup>nd</sup> June 2018, Davos, Switzerland

- **Sousa A**, Tomasino MP, Duarte P, Fernández-Méndez M, Assmy P, Ribeiro H, Surkont J, Leite R, Leal JP, Torgo L & Magalhães C. *The Arctic microbiome during the winter-spring transition: nitrogen-cycle genes*, POLAR2018 - Open Science Conference OSC, 20<sup>th</sup> June 2018, Davos, Switzerland
- Magalhães C, **Sousa A**, Tomasino MP, Santos JP, Duarte P, Torgo L & Assmy P. *Biogeography of Arctic microbial communities across the Svalbard shelf*, POLAR2018 - Open Science Conference OSC, 19<sup>th</sup> June 2018, Davos, Switzerland

- **Sousa A**, Duarte P, Assmy P & Magalhães C. *Shifts in Arctic microbial communities during the winter-spring transition*, 8ª Conferência Portuguesa de Ciências Polares, 27<sup>th</sup> October 2016, Lisbon, Portugal
- **Sousa A**, Monteiro M, Ramos V, Leão P, Lee C, Cary C & Magalhães C. *How nitrogen is recycled in cryptoendolithic communities of Antarctic deserts?*, 9ª Edição Investigação Jovem na Universidade do Porto, 17<sup>th</sup> February 2016, Porto, Portugal
- Pinto A, **Sousa A**, Martins F, Sousa M, Sousa S, Graça A, Amorim I & Lage O. *Bioactivity potential and phylogenetic characterization of bacteria isolated from intertidal macroalgae from Foz do Douro*, 9ª Edição Investigação Jovem na Universidade do Porto, 17<sup>th</sup> February 2016, Porto, Portugal

## Awards and Fellowships

---

- **2017**  
Short-term scholarship award competition for young researchers 2016 - Phase 2 - under the Portuguese Polar Program (PROPOLAR) funded by the Portuguese Foundation of Science and Technology (FCT)
- **2015**  
School prize Doutor António Leitão due to the exceptional learning in the course unit Plant Anatomy and Physiology

## References

---

- **Dr. Catarina Magalhães**
  - e-mail: [cmagalhaes@ciimar.up.pt](mailto:cmagalhaes@ciimar.up.pt)
  - website: <https://www2.ciimar.up.pt/team.php?id=85>
- **Dr. Pedro Duarte**
  - e-mail: [pedro.duarte@npolar.no](mailto:pedro.duarte@npolar.no)
  - website: <http://www.npolar.no/en/people/pedro.duarte>
- **Dr. Luís Torgo**
  - e-mail: [ltorgo@dal.ca](mailto:ltorgo@dal.ca)
  - website: <https://web.cs.dal.ca/~ltorgo/>
- **Dr. Pedro Leão**
  - e-mail: [pleao@ciimar.up.pt](mailto:pleao@ciimar.up.pt)
  - website: <https://leaolab.wixsite.com/leaolab>
- **Dr. Ricardo Leite**
  - e-mail: [rleite@igc.gulbenkian.pt](mailto:rleite@igc.gulbenkian.pt)
  - website: <http://facilities.igc.gulbenkian.pt/genomics/genomics-GU-team.php>
- **Dr. Jingtao Lilue**
  - e-mail: [jlilue@igc.gulbenkian.pt](mailto:jlilue@igc.gulbenkian.pt)

- website: <http://facilities.igc.gulbenkian.pt/bioinformatics/bioinformatics-people.php>