António Sousa | Curriculum Vitae

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Current Position

Medical Bioinformatics Centre - Turku Bioscience **Turku, Finland**
PhD Student *Aug 2021-*

Supervision: Dr. Sini Junttila & Prof. Laura Elo
Work place: 7th floor, Biocity, Tykistökatu 6A, 20520 Turku, Finland

Previous Work Experience

Projects (positions)

- **Bioinformatics Unit at IGC** **Oeiras, Portugal**
  Bioinformatician *Oct 2019-Jul 2021*

  - Supervision: Dr. Jingtao Lilue
  - Responsabilities: bioinformatic support, training, analysis and management of a high performance computer
  - Work place: Instituto Gulbenkian de Ciência, Oeiras, Portugal

- **NANOSED Project** **Matosinhos, Portugal**
  Research Fellow *Oct 2018-Oct 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
  - Supervision: Dr. Mafalda Baptista & Dr. Catarina Magalhães
  - Responsabilities: field sampling campaigns, chemical/molecular biology techniques, bioinformatics and statistical analyses
  - Work place: Interdisciplinary Centre of Marine and Environmental Research - University of Porto, Matosinhos, Portugal

- **MarRisk Project** **Matosinhos, Portugal**
  Research Grant (BI) *Nov 2017-Sept 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
- Supervision: Dr. Catarina Magalhães
- Responsabilities: marine microbiome sampling, chemical/molecular biology techniques, bioinformatics and statistical analyses
- Work place: Interdisciplinary Centre of Marine and Environmental Research - University of Porto, Matosinhos, Portugal

Professional Formation

Academic Qualifications

- **P.G. Bioinformatics and Computational Biology - *24 ECTS*** **Porto, Portugal**
  Post-Graduation - Faculty of Sciences, University of Porto *Sept 2017-July 2018*

- **M.Sc. Cell and Molecular Biology** **Porto, Portugal**
  Master's Degree - Faculty of Sciences, University of Porto *Sept 2015-Nov 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** **Porto, Portugal**
  Bachelor's Degree - Faculty of Sciences, University of Porto *Sept 2012-July 2015*
  - Final grade: 15/20 (grade B on the European grading scale)

International mobility

- Secondment in the laboratory of Dr. María Martínez (11/09-06/10/2023, IBM Research)
- Secondment in the laboratory of Prof. Lucy Walker (27/06-08/07/2022, UCL)
- International oceanographic campaign in Kongsfjorden, Svalbard, Norway (12-17/07/2018)

Courses - instructor

- **The Hitchhiker's Guide to scRNA-seq** **Lisbon, Portugal**
  ENLIGHT-TEN+ *08-12 Jul 2024*
  - Title: The Hitchhiker's Guide to scRNA-seq
  - Site: https://elolab.github.io/Hitchhikers_Guide_scRNAseq_course
  - Organized: Instituto de Medicina Molecular João Lobo Antunes
  - Place: Instituto de Medicina Molecular João Lobo Antunes, Lisbon, Portugal

- **Bioinformatics for T-Cell immunology** **Cambridge, UK**
  Course Materials *11-15 Jul 2022*
  - Title: *Bioinformatics for T-Cell immunology*
  - Site: https://elolab.github.io/Bioinfo_Tcell_projects_22
  - Organized: EMBL-EBI

- Place: EMBL-EBI, Cambridge, UK

- **Inspiring Science 2020 - Bioinformatics** **Oeiras, Portugal**
  Inspiring Science 2020 - Bioinformatics *2-3-9-10 Dec 2020*
  - Title: *Inspiring Science 2020 - Bioinformatics*
  - Target: Portuguese high-school biology teachers
  - Aim: introduce basic concepts of bioinformatics and bioinformatics practicals to apply in the classroom
  - Organized: IGC Public Engagement Unit
  - Place: Instituto Gulbenkian de Ciência, Oeiras, Portugal (virtual format)

- **Advanced Topics in Bioinformatics** **Oeiras, Portugal**
  Master Class *24 Mar 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 (virtual format)

- **Microbiome visualization with Biome-Shiny** **Oeiras, Portugal**
  BioData.pt Crash Course *31 Jan 2020*
  - Title: BioData.pt Crash Courses: Microbiome visualization with Biome-Shiny
  - Site: https://igcbioinformatics.github.io/biomeshinycourse/
  - Organized: BioData.pt, IGC Genomics & Bioinformatics Units (GE/UBI-IGC)
  - Place: Instituto Gulbenkian de Ciência, Oeiras, Portugal

Programming Skills

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

Academic merits

- **2018**

  Member of the Portuguese Society of Microbiology

- **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

Publications

Papers in Peer-Reviewed Journals

- Buchacher T, Shetty A, Koskela SA, Smolander J, Kaukonen R, **Sousa AGG**, Junttila S, Laiho A, Rundquist O, Lönnberg T, Marson A, Rasool O, Elo LL Lahesmaa, R. (2023) PIM kinases regulate early human Th17 cell differentiation. *Cell Reports*, 42(12). https://doi.org/10.1016/j.celrep.2023.113469

- Jentho E, **Sousa AGG**, Ramos S, Ademolue TW, Sobral J, Costa J, Brito D, Monteiro M, Leite RB, Lilue J & Soares MP. (2023) Single-cell RNA sequencing and analysis of rodent blood stage Plasmodium. *STAR Protocols*, 4(3), 102491. https://doi.org/10.1016/j.xpro.2023.102491

- Misra CS, **Sousa AGG**, Barros PM, Kermanov A, & Becker JD. (2023) Cell-type-specific alternative splicing in the Arabidopsis germline. *Plant Physiology*, 192(1), 85-101. https://doi.org/10.1093/plphys/kiac574

- Ramos S, Ademolue TW, Jentho E, Wu Q, Guerra J, Martins R, Pires G, Weis S, Carlos AR, Mahú I, Seixas E, Duarte D, Rajas F, Cardoso S, **Sousa AGG**, Lilue J, Paixão T, Mithieux G, Nogueira F & Soares MP. (2022) A hypometabolic defense strategy against malaria. *Cell Metabolism*, 34(8), 1183-1200. https://doi.org/10.1016/j.cmet.2022.06.011

- Costa J, **Sousa AGG**, Carneiro AC, Mucha AP, Almeida MR, Magalhães C & Baptista MS. (2021) Emerging investigator series: prompt response of estuarine denitrifying bacterial communities to copper nanoparticles at relevant environmental concentrations. *Environmental Science: Nano*, 8(4), 913-926. https://doi.org/10.1039/d0en01160f

- Peixoto B, Moraes TA, Mengin V, Margalha Leonor, Vicente R, Feil R, Höhne M, **Sousa AGG**, Lilue J, Stitt M, Lunn JE & Baena-González E. (2021) Impact of the SnRK1 protein kinase on sucrose homeostasis and the transcriptome during the diel cycle. *Plant Physiology*, 187(3), 1357-1373. https://doi.org/10.1093/plphys/kiab350

- Paiva RA, **Sousa AGG**, Ramos CV, Ávila M, Lilue J, Paixão T & Martins VC. (2021) Self-renewal capacity of double negative 3 (DN3) early thymocytes preserves thymus autonomous function but compromises the β-selection checkpoint. *Cell Reports*, 35(2). https://doi.org/10.1016/j.celrep.2021.108967

- 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/full

- 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

- **Sousa AGG**, Smolander J, Junttila S & Elo LL. (2024) Inferring tree-shaped single-cell trajectories with Totem. In: Azad, R.K. (eds) Transcriptome Data Analysis. *Methods in Molecular Biology*, vol 2812. Humana, New York, NY. https://doi.org/10.1007/978-1-0716-3886-6_9

- Ribeiro H, Santos JP, **Sousa AGG**, Salgado P, Tomasino MP, Baptista M & Magalhẽs C. (2020) Aerobic ammonia-oxidising prokaryotes: a perspective of the niche segregation under estuarine salinity fluctuation. 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.