
PROFILE

PhD candidate with practical experience in the fields of circadian biology, microbiology and bioinformatics.

EDUCATION

2017-Present	PhD in Molecular and Cell Biology University of Manchester	Due for submission March 2022
2014-2016	MSc in Molecular and Cell Biology University of Porto	Final grade: 19/20
2011-2014	BSc in Biology University of Porto	Final grade: 17/20

RESEARCH AND TEACHING EXPERIENCE

2017-Present	PhD Candidate University of Manchester Research on the feasibility of utilising heat pulses to restore dampened circadian oscillations in articular cartilage: investigated the molecular mechanisms behind the heat-mediated clock synchronisation and evaluated impacts on tissue homeostasis. Collaborated with peers on lab tasks that required technical expertise and with writing papers. Acted as final year project supervisor for two undergraduate students. Supervisors: Qing-Jun Meng and Magnus Rattray
2018-2019	Graduate Teaching Assistant University of Manchester Involved in teaching of undergraduate courses and marking of exams. Taught both in wet and dry lab modules.
2017-2017	Pre-doctoral Researcher Institute for Research and Innovation in Health (i3S) Studied outer membrane vesicles and factors regulating their overproduction in the cyanobacterium <i>Synechocystis</i> sp. PCC 6803. Supervisors: Paula Tamagnini and Paulo Oliveira
2015-2016	Graduate Research Trainee (MSc) Institute for Research and Innovation in Health (i3S) and Institute for Molecular and Cell Biology (IBMC) Identified and functionally characterised multiprotein transport complexes in <i>Synechocystis</i> . Performed the <i>in silico</i> molecular analysis (whole-genome sequencing) and phenotypic characterisation of two <i>Synechocystis</i> strains. Supervisors: Paula Tamagnini and Paulo Oliveira
2013-2014	Undergraduate Research Trainee (BSc) Institute for Molecular and Cell Biology (IBMC) Investigated the transcriptional regulation of genes related to the biosynthesis and export of extracellular polymeric substances in cyanobacteria. Supervisors: Paula Tamagnini and Sara Pereira

TECHNICAL SKILLS

Molecular Biology	Isolation of DNA, RNA and protein; cDNA synthesis; PCR; molecular cloning (restriction mapping, gene targeting through homologous recombination including CRISPR/Cas9, transformation and transfection); electrophoretic separation of DNA and proteins; immunoblotting; immunofluorescence; immunohistochemistry.
Cell Biology	Mammalian (immortalised and primary) cell and tissue culture; pure culture techniques and bacterial culture maintenance; bacterial growth measurements (optical density and viable cell count); competent cell preparation; fluorescence microscopy; confocal microscopy including techniques such as FCS and FRAP; transmission electron microscopy.
Bioinformatics	Proficient in R; experienced in data mining and computational analysis of genomes (whole-genome sequencing), transcriptomes (RNA-sequencing) and proteomes (SILAC proteomics); competent with the following software: GraphPad Prism, Geneious, CLC Genomics, SnapGene, Genome Compiler, ImageLab, ImageJ, MEGA.

LANGUAGE SKILLS

Portuguese	Fluent (native speaker).
English	Fluent (C2 level - overall band score of 8.5 in IELTS Academic 2017).

OTHER SKILLS

Graphic Design	Adobe Illustrator, Adobe Photoshop and Adobe InDesign.
Programming	Experience with Python and HTML.

AWARDS & HONOURS

2017-2022	PhD Studentship Wellcome Trust Studentship covering research costs (£52,500) and stipend.
2019	Science Communication in Microbiology Portuguese Microbiology Society Honourable mention in collaboration with Sofia Oliveira (€150).
2013	Scholastic Award Dr António Leitão University of Porto Highest grade achieved in the Plant Anatomy and Physiology module.
2012	Scholastic Award Dr Manuel Ferreira University of Porto Highest grade achieved in the Algae and Plants Biology module.

PUBLICATIONS

- 2021 **Gonçalves, C.F.**, Lima, S., and Oliveira, P., Product export in cyanobacteria. In: *Cyanobacteria Biotechnology*. John Wiley & Sons, 369–406.
- Morris, H., **Gonçalves, C.F.**, Dudek, M., Hoyland, J., and Meng, Q.-J., Tissue physiology revolving around the clock: circadian rhythms as exemplified by the intervertebral disc. *Annals of the Rheumatic Diseases*, 80 (7), 828–839.
- 2020 Yang, N., Smyllie, N.J., Morris, H., **Gonçalves, C.F.**, Dudek, M., Pathiranage, D.R.J., Chesham, J.E., Adamson, A., Spiller, D.G., Zindy, E., Bagnall, J., Humphreys, N., Hoyland, J., Loudon, A.S.I., Hastings, M.H., and Meng, Q.-J., Quantitative live imaging of Venus::BMAL1 in a mouse model reveals complex dynamics of the master circadian clock regulator. *PLOS Genetics*, 16 (4), e1008729.
- 2019 **Gonçalves, C.F.** and Meng, Q.-J., Timing metabolism in cartilage and bone: links between circadian clocks and tissue homeostasis. *Journal of Endocrinology*, 243 (3), R29–R46.
- Gonçalves, C.F.**, Lima, S., Tamagnini, P., and Oliveira, P., Cyanobacterial secretion systems: understanding fundamental mechanisms toward technological applications. In: A.K. Mishra, D.N. Tiwari, and A.N. Rai, eds. *Cyanobacteria*. Academic Press, 359–381.
- 2018 **Gonçalves, C.F.**, Pacheco, C.C., Tamagnini, P., and Oliveira, P., Identification of inner membrane translocase components of TolC-mediated secretion in the cyanobacterium *Synechocystis* sp. PCC 6803. *Environmental Microbiology*, 20 (7), 2354–2369.

PUBLIC ENGAGEMENT

- 2021 **Cartas com Ciência**
www.cartascomciencia.org
Letter exchange programme between scientists and students from Portuguese-speaking countries.
- 2020 **SMF Summer Activity**
The Social Mobility Foundation
Virtual (due to the COVID-19 pandemic) work placement for high-achieving students from low income backgrounds; presented about my research journey and day-to-day as a scientist.
- 2019 **Community Festival**
University of Manchester
Co-organised and ran the activity entitled: “What came first: the chicken or the egg? An evolutionary tale”.
- 2018 **Science Spectacular**
University of Manchester
Drew the illustrations, co-organised and ran the activity entitled: “What came first: the chicken or the egg? An evolutionary tale”.
- 2013 **11th Science, Education and Innovation Fair**
University of Porto
Informed visitors about different Biology fields.
- 2012 **10th Science, Education and Innovation Fair**
University of Porto
Informed visitors about different Biology fields.

COMMUNICATIONS

2020	III Semana do NEBUP Porto, Portugal Invited speaker: "Utilising heat shock pulses to boost circadian rhythms in articular cartilage".	18 th November 2020
2020	School of Biological Sciences Annual Event Manchester, United Kingdom Poster presentation: "Utilising heat shock pulses to boost circadian rhythms in articular cartilage".	10 th January 2020
2016	5th i3S Meeting Póvoa de Varzim, Portugal Poster presentation and oral communication: "Uncovering the mechanisms of cyanobacterial secretion: from multidrug efflux to protein export".	3 rd -4 th November 2016

CONFERENCES & SYMPOSIUMS

2020	UK Clock Club Bristol, United Kingdom	27 th November 2020
2020	Chronobiology of COVID-19 - a CAREebers workshop Virtual	9 th July 2020
2019	CAREebers Conference Munich, Germany	18 th November 2019
2019	UK Clock Club Cambridge, United Kingdom	6 th September 2019
2018	UK Clock Club Manchester, United Kingdom	6 th July 2018
2016	2nd Annual MCBiology Symposium: Orchestrating life, from molecules to cells Porto, Portugal	17 th November 2016
2015	GABBA Annual Symposium Porto, Portugal	24 th July 2015
2012	12th International Symposium on Tardigrada Vila Nova de Gaia, Portugal	23 rd -26 th July 2018