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University of Tasmania
Institute for Marine and Antarctic Studies (IMAS)
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EDUCATION

PhD Student, Biological Science 2018-2022

Institute for Marine and Antarctic Studies (IMAS), University of Tasmania, UTAS, Australia

Thesis title: The Pelagic Microbial Community of Macquarie Harbour, Tasmania: Ecology and Response to Aquaculture

Microbial Ecology and Bioinformatics

IMAS Tasmania Graduate Research Scholarship

MBA in Data Analysis and Analytics (Distance Education)

2020-Present

University of São Paulo, Luiz de Queiroz College of Agriculture, ESALQ/USP

Unsupervised and supervised machine learning, spatial and temporal analysis, deep learning

Master of Science in Animal Biology

2007-2009

Department of Genetics and Morphology, University of Brasilia, UnB, Brazil

Thesis title: Genotoxicity and acute toxicity from a bloom of *Microcystis* spp in two freshwater finfish

Research field: fish farming, genetics, aquatic toxicology, histology.

Specialization in Urban and Environmental Law

2011-2012

University for Development of Pantanal State and Region, UNIDERP, Brazil

Bachelor's Degree in Biological Science

2001-2005

University of Brasilia, UnB, Brazil

PUBLICATIONS**PRESENTATIONS****& TECHNICAL****WORKS****Research articles as first author:**

- Da Silva, R.R.P., White, C.A., Bowman, J.P., Bodrossy, L., Bissett, A., Reville, A., Eriksen, R. and Ross, D.J., (2022). Network and machine learning analyses of estuarine microbial communities along a freshwater-marine mixed gradient. *Estuarine, Coastal and Shelf Science*, p.108026. <https://www.sciencedirect.com/science/article/pii/S0272771422002840>

- Da Silva, RRP, White, CA, Bowman, JP & Ross, DJ. Composition and functionality of bacterioplankton communities in marine coastal zones adjacent to finfish aquaculture (2022). *Marine Pollution Bulletin*. <https://doi.org/10.1016/j.marpolbul.2022.113957>.

- Da Silva, R.R.P., White, C.A., Bowman, J.P., Raes, E., Bissett, A., Chapman, C., Bodrossy, L. and Ross, D.J., (2021). Environmental influences shaping microbial communities in a low oxygen, highly stratified marine embayment. *Aquatic Microbial Ecology*, 87, pp.185-203. <https://www.int-res.com/abstracts/ame/v87/p185-203/>

- Silva, Ricardo Rocha Pavan da; Pires Junior, Osmino Rodrigues; Grisolia, Cesar Koppe . Genotoxicity in *Oreochromis niloticus* (Cichlidae) induced by *Microcystis* spp bloom extract containing microcystins. *Toxicon* (Oxford), v. 58, p. 259-264, 2011. <https://doi.org/10.1016/j.toxicon.2011.06.005>

- SILVA, Ricardo Rocha Pavan da; PIRES JUNIOR, Osmino Rodrigues and GRISOLIA, Cesar Koppe. Toxicity and genotoxicity in *Astyanax bimaculatus* (Characidae) induced by microcystins from a bloom of *Microcystis* spp. *Genet. Mol. Biol.* [online]. 2010, vol.33, n.4, pp. 750-755. ISSN 1415-4757. <http://dx.doi.org/10.1590/S1415-47572010000400023>

Manuscripts Under Review & Preprints as first author:

- Da Silva, RRP, White, CA, Bowman, JP & Ross, DJ. Effects of finfish farms on pelagic protist communities in a semi-closed stratified embayment. bioRxiv. <https://doi.org/10.1101/2022.08.08.503163> Submitted

- Da Silva, RRP, Diniz, F., Tortelote, G. Comparisons of single-cell/nucleus techniques show the capture of large transcripts is favored in single-nucleus RNA sequencing. Submitted.

Conference presentations:

- Silva, RRP; Junior, ORP; Grisolia, CK. Toxicity and genotoxicity to *Oreochromis niloticus* (Cichlidae) of an extract from a bloom of *Microcystis* spp containing microcystin. In: 55th Brazilian Congress of Genetics, 2009, Águas de Lindoia. Annals of the 55th Brazilian Congress of Genetics. Ribeirão Preto: Editora da SBG, 2009. Referências adicionais: Event classification: National; Brazil/ Portuguese; Disclosure means: Printed.

- Martins, O. M. ; ROCHA, R. P. S. Banco de Dados de Espécies Invasoras Exóticas Potenciais e Atuais nos Sistemas de Produção da Agricultura. 2005. (Simposium).

Technical reports:

- STROEH, E.; SILVA, R.R,P; SANTOS, I. R. Ações de gestão ambiental pós-implantação de empreendimentos da Eletrosul 2011 (Technical report). (Post-implementation environmental management actions of projects of Southern Brazilian Energy Company). Sectors: water, sewage, decontamination and residual management activities; management activities and infrastructure works. Homepage: <http://www.xxisnptee.com.br/site/>.

- SILVA, R.R,P; STROEH, E. ; SANTOS, I. R. Sistema de monitoramento dos indicadores ambientais no âmbito da Eletrosul 2011 (Technical report). (Monitoring system of environmental indicators at Southern Brazilian Energy Company) Sectors: water, sewage, decontamination and residual management activities; management activities and infrastructure works. Homepage: <http://www.xxisnptee.com.br/site/>.

- SILVA, R.R,P;; CRUZ, R. C. ; Silveira, G. L. . Análise Hidroecológica do Cenário de Vazão Basal de 14,7 m3/s para a Alça de Vazão Reduzida da Usina Hidrelétrica Passo São João. 2011. (Hydroecological analysis of 14.7m3/s base flow scenario for the Hydropower Plant Passo São João's reduced flow stretch). Object: Hydroecological technical analysis of the reduced flow stretch in a hydropower project in order to determine the ecological viability of the project area.

- BRASIL. Desafios para o Monitoramento e Observação dos Impactos das Mudanças Climáticas (Challenges for Monitoring and Observation of Climate Change Impacts). Ministry of Science, Technology and Innovation.Brasília. 2015. (Reviewer and Technical Team)

- BRASIL. Third National Communication of Brazil to the United Nations Framework Convention on Climate Change. Ministry of Science, Technology and Innovation.Brasília: Ministério da Ciência, Tecnologia e Inovação, 2016. (Technical Team)

WET LAB EXPERIENCE

Molecular biology, DNA extraction, animal models, Water quality (sampling and analysis), PCR, Electrophoresis, Micronucleus and Comet assays, apoptosis-necrosis test, Histology

SKILLS

- Excellent communication skills (writing and speaking)
- Next generation sequencing approaches
- Bioinformatics
- Data wrangling and analysis
- R, Linux, and Python
- Project management

EXPERIENCE

University of Tasmania, Australia **01/08/2022–present**

Institute for Marine and Antarctic Studies (IMAS)

Bioinformatician and Data Analyst

- Analysis of bacterial and archaeal communities in Storm Bay, Tasmania, Australia
- Environmental assessment of aquaculture effects in Storm Bay, Tasmania, Australia

Brazilian Microbiome Project, Brazil

04/06/2022-present

Collaboration with <https://www.brmicrobiome.org>

- Assemble microbiome databases.
- Co-ordinate and support metagenomic projects

Brazilian Ministry of Science, Technology, and Innovation, MCTI, Brazil

01/03/2013–present

Activities

Science, Technology and Innovation Analyst

- Project management for the scientific, technological and innovation development.
- Monitoring and evaluation of policies and programs (national or international) in areas of strategic interest like ecosystems, meteorology, climatology and hydrology, marine sciences, -
- Development of adaptation and mitigation strategies for climate change.
- Development and management of AdaptaBrasil: an integrated platform to deliver

information and an analysis system on the impacts of climate change
Northern Brazilian Power Company, ELETRONORTE, Brazil 20/08/2012-01/03/2013
Activities
 Biologist at the Department of Environmental Studies and Projects of Power Generation
 - Coordination of environmental management projects
 - Environmental assessment in aquatic ecosystem of hydropower projects
 - Reservoir management
 - Coordination, monitoring and analyses of studies and reports on the monitoring and management of power generation projects
 - Field work: Northern Brazil (Amazonia region)

Southern Brazilian Power Company, ELETROSUL, Brazil 19/04/2010-01/03/2013
Activities
 Environmental Analyst at the Department of Environmental Management
 - Coordination of environmental management projects and environmental business management
 - Environmental assessment of energy generation and transmission projects
 - Coordination, monitoring and analyzes of studies and reports on the monitoring and management of hydropower, power substation, transmission lines and wind farm projects
 - Management of the company's activities in the environmental context, like control of water, paper and plastic uses, control and management of the company's sewage network and report the company's activities for the stock market sustainability indexes (ISE – BM&F Bovespa and DJSI - Dow Jones).
 - Field work: Southern Brazil (Brazilian Atlantic Rainforest, Brazilian Grassland)

Brazilian Ministry of Health, MS, Brazil 03/04/2009-30/03/2010
Activities
 Hired through United Nations Development Programme - UNDP
 Provision of Technical Services of the Department of Environmental Health Surveillance and Occupational Health. Environmental licensing actions and the inclusion of health actions; Provision of advice and technical notes for environmental licensing; guidance, monitoring, identification of issues for the environmental licensing for representatives of the Ministry of Health; Developing tools for standardization and management of health programs in the environmental licensing of plans and projects; Participation in the National Environmental Council (CONAMA).

Larrosa&Santos Consultores Associados SA, LSCA, Brazil 2006-2010
Activities
 Consultant
 - Environmental impact assessment of engineering projects (hydropower, transmission lines and roads) in aquatic ecosystems (water quality, plankton and fish sampling and analysis).
 - Field work: Northern Brazil, Midwestern Brazil, Southeastern Brazil (Amazonia region and Brazilian Savannah)

State Department of Education of the Federal District, Brazil 01/08/2005-12/04/2010
Activities
 Science/Biology/Math Teacher

Brazilian Corporation of Agricultural Research, EMBRAPA, Brazil 01/03/2005-30/08/2005
Activities
 Research and development at the Department of Quarantine and Germplasm
 Database development for harmful invasive species to agriculture

Caixa Econômica Federal (State owned Bank), CEF, Brazil 2002-2003
Activities
 General Services

Ricardo Rocha Pavan da Silva