



Rafael Menezes

Ph.D. Candidate in Ecology,
M.Sc. in Physics

- +55 71 99266 8270
- www.rafaelmenezes.com
- r.menezes@usp.br
- University of São Paulo, Brazil

Social Network

- ORCID
- Research Gate
- @r-menezes (Github)
- Google Scholar

Languages

- Portuguese
- English

Skills

- Dynamical Systems (Modeling)
- Complex Networks Theory
- Community Ecology
- Statistical Analysis
- Monte Carlo Simulation
- Linear Algebra, Calculus
- Python, Cython, C++
- Linux, Bash
- LaTeX, Inkscape, Web Design

Summary

I am a scientist with a physics-backed formation and interest in ecological and biological questions. Above all, I am interested in unraveling the complexities of nature with the aid of mathematical models, computational simulations, and interdisciplinary inquiry. Currently, I am fascinated with questions about how the stability and coexistence of large communities are influenced by interaction, movement, and abiotic environment.

Education

- 2021 – present **Doctor of Philosophy in Ecology** São Paulo University (USP)
Advisor: *Prof. Dr. Ricardo García-Martínez*
- 2017 – 2020 **Master of Science in Physics** Federal University of Bahia (UFBA)
Advisor: *Profa. Dra. Suani Pinho*;
co-advisors: *Profa. Dra. Flora Bacelar, Prof. Dr. Pedro Meirelles*
Master Thesis
Exploring Ecological Interactions Using the Generalized Lotka-Volterra Model: Coexistence and Resilience of Populations, defended in December 15th, 2020
- 2012 – 2017 **Bachelor of Science in Physics** Federal University of Bahia (UFBA)
Study abroad: 2014 – 2015 at Radboud University, Nijmegen NL,
Funded by a CAPES Science Without Borders Grant

Publications

- 2020 **Integrating Computational Methods to Investigate the Macroecology of Microbiomes.**
Mascarenhas, R., Ruziska, ... dos Santos, R. M., ... & Meirelles, P.M.
Frontiers in Genetics, 10, 1344.
- 2019 **In response to “An allometric tragedy of the commons: Response to the article ‘Evaluation of models capacity to predict size spectra parameters in ecosystems under stress’”.**
dos Santos, R. M., Hilbers, J. P., & Hendriks, A. J.
Ecological Indicators, 96, 747-749.
- 2017 **Evaluation of models capacity to predict size spectra parameters in ecosystems under stress.**
dos Santos, R. M., Hilbers, J. P., & Hendriks, A. J.
Ecological Indicators, 79, 114-121.

Scholarships and Awards

- 2021 – present **CNPq Ph.D. Scholarship Grant** CNPq
Ph.D. Scholarship Grant funded by CNPq (48 months)
- 2017 – 2019 **CAPES M.Sc. Scholarship Grant** CAPES
M.Sc. Scholarship Grant funded by CAPES (24 months)
- 2017 **Honorable Mention at the UFBA 2017 Congress** UFBA
Honorable Mention received during the XXXVI Student Research Seminar for the project "Dynamical models of vectorial-borne diseases" conducted under supervision of profa. Dra. Suani Pinho
- 2016 – 2017 **Dynamical Models of Vector-borne Diseases** FAPESB
B.Sc. Research Scholarship Grant funded by FAPESB (12 months)
- 2014 – 2015 **Exchange Student – Radboud University, Nijmegen** CAPES
Science Without Borders Exchange Program Grant (12 months)
- 2013 – 2014 **Maxwell Equations at Minkowsky Space** FAPESB
B.Sc. Research Scholarship Grant funded by FAPESB (12 months)
- 2012 – 2013 **Galilean Relativity: Inertial and Non-Inertial Systems** CNPq
B.Sc. Research Scholarship Grant funded by CNPq through the program "Young Talents for Science" (12 months)
- 2010 **Silver Medal at the Brazilian Physics Olympiad** SBF - BA
Awarded by the State Coordination of the Brazilian Physics Olympics

Presentations

2020	School of Community Ecology: from principles to patterns Community Interactions: Integrating dynamical systems and network science	Student talk
2017	Congress of Research, Teaching and Outreaching at UFBA Understanding Epidemics Through Mathematical Modeling: Zika, Dengue and Leishmaniasis	Congress
2017	I Scientific Meeting on Modeling in Ecology and Evolution (ECMEE), Brazil Mathematical Modeling of Leishmaniasis: Control Through Collar with Insecticide	Meeting
2017	II National Meeting of Statistical Physics (ENFE), Brazil Mathematical Modeling of Leishmaniasis: Control Strategies	Conference
2015	Europhysics Conference of International Research Group on Physics Teaching Understanding Entropy: translating the technical into the intuitive	Conference
2015	International Conference of Physics Students (ICPS) Darwin in Silico: a simple model of evolution	Conference
2014	International Conference of Physics Students (ICPS) Philosophy of Time and a Proposal of a Physical Argument for it's Non Reversibility	Conference
2013	XXXII Student Research Seminar Galilean Relativity: Inertial, non-inertial systems and their relations	Seminar

Tutoring

2020	IX Southern Summer School of Mathematical Biology Tutoring groups on building and analysing mathematical models in biological systems. Tutored projects were: Microbial Matriarchy and Tasty Parasites. Organizers: Marcus Aguiar, Marcel Clerc, Roberto Kraenkel, Paulo Inácio Prado	Summer School
2019	VIII Southern Summer School of Mathematical Biology Tutoring groups on building and analysing mathematical models in biological systems. Tutored project were: Fear of the Crab and Bacteria Fight Dirty. Organizers: Marcus Aguiar, Marcel Clerc, Roberto Kraenkel, Paulo Inácio Prado	Summer School

Affiliations

2018-now	Interdisciplinary and Transdisciplinary Studies in Ecology and Evolution - INCT - Integrative Project in Mathematical, computational and statistical modeling applied to ecology and evolution. Coordinator: Charbel Nino El-Hani
2015-now	Group of Statistical Physics and Complex Systems (FESC) - UFBA Coordinator: Roberto Andrade