LUCAS P. MEDEIROS

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ACADEMIC APPOINTMENTS

University of California, Santa Cruz *2022-*
Postdoctoral Scholar at the Fisheries Collaborative Program (UCSC and NOAA Fisheries)
Supervisors: Stephan Munch and Eric Palkovacs

EDUCATION

Massachusetts Institute of Technology *2018-2022*
Ph.D. in Civil and Environmental Engineering
Advisor: Serguei Saavedra

University of São Paulo *2015-2017*
M.S. in Ecology
Advisor: Paulo R. Guimarães Jr

University of São Paulo *2014-2017*
B.S. in Applied and Computational Mathematics

University of São Paulo *2009-2013*
B.S. in Biological Sciences
Advisors: Paulo R. Guimarães Jr and Esther Sebastián-González

PUBLICATIONS

10. **Medeiros, L. P.** and Saavedra, S. (2023). Understanding the state-dependent impact of species correlated responses on community sensitivity to perturbations. *Ecology*, e4115. https://doi.org/10.1002/ecy.4115
9. Camacho, L. A., Andreazzi, C. S., **Medeiros, L. P.**, Birskis-Barros, I., Emer, C., Reigada, C., and Guimarães Jr, P. R. (2023). Cheating interactions favor modularity in mutualistic networks. *Oikos*, 2023(3), e09176. https://doi.org/10.1111/oik.09176
8. **Medeiros, L. P.**, Allesina, S., Dakos, V., Sugihara, G., and Saavedra, S. (2023). Ranking species based on sensitivity to perturbations under non-equilibrium community dynamics. *Ecology Letters*, 26(1), 170-183. https://doi.org/10.1111/ele.14131
7. **Medeiros, L. P.***, Song, C.*, and Saavedra, S. (2021). Merging dynamical and structural indicators to measure resilience in multispecies systems. *Journal of Animal Ecology*, 90(9), 2027–2040. https://doi.org/10.1111/1365-2656.13421 (* equal contribution)
6. **Medeiros, L. P.**, Boege, K., Del-Val, E., Zaldívar-Riverón, A., and Saavedra, S. (2021). Observed ecological communities are formed by species combinations that are among the most likely to persist under changing environments. *The American Naturalist*, 197(1), E17–E29. https://doi.org/10.1086/711663
5. Saavedra, S., **Medeiros, L. P.**, and AlAdwani, M. (2020). Structural forecasting of species persistence under changing environments. *Ecology Letters*, 23(10), 1511-1521. https://doi.org/10.1111/ele.13582

4. Pires, M. M., O'Donnell, J. L., Burkle, L. A., Diaz-Castelazo, C., Hembry, D. H., Yeakel, J. D., Newman, E. A., **Medeiros, L. P.**, De Aguiar, M. A. M., and Guimarães Jr, P. R. (2020). The indirect paths to cascading effects of extinctions in mutualistic networks. *Ecology*, 101(7), e03080. https://doi.org/10.1002/ecy.3080

3. Cenci, S., **Medeiros, L. P.**, Sugihara, G., and Saavedra, S. (2020). Assessing the predictability of nonlinear dynamics under smooth parameter changes. *Journal of the Royal Society Interface*, 17(162), 20190627. https://doi.org/10.1098/rsif.2019.0627

2. **Medeiros, L. P.**, Garcia, G., Thompson, J. N., and Guimarães Jr, P. R. (2018). The geographic mosaic of coevolution in mutualistic networks. *Proceedings of the National Academy of Sciences*, 115(47), 12017-12022. https://doi.org/10.1073/pnas.1809088115

1. Dáttilo, W., Lara-Rodríguez, N., Jordano, P., Guimarães Jr, P. R., Thompson, J. N., Marquis, R. J., **Medeiros, L. P.**, Ortiz-Pulido, R., Marcos-García, M. A. and Rico-Gray, V. (2016). Unraveling Darwin's entangled bank: architecture and robustness of mutualistic networks with multiple interaction types. *Proceedings of the Royal Society B*, 283(1843), 20161564. https://doi.org/10.1098/rspb.2016.1564

AWARDS

Vito Volterra Award for Best Student Oral Presentation -
Ecological Society of America Theoretical Ecology Section *August 2021*

Best M.S. thesis of 2017 in Ecology at the University of São Paulo *March 2018*

FELLOWSHIPS

Ph.D. fellowship - Martin Family Society of Fellows for Sustainability
(MIT Environmental Solutions Initiative) *2021-2022*

Ph.D. scholarship - Swiss Government Excellence Scholarship (declined) *2018*

Laboratory technician scholarship - São Paulo Research Foundation (FAPESP) *2017 - 2018*

M.S. scholarship - São Paulo Research Foundation (FAPESP) *2015 - 2017*

Scientific Initiation scholarship - São Paulo Research Foundation (FAPESP) *2014*

M.S. scholarship - National Council for Scientific and Technological Development (CNPq) *2015*
(1st place in the admissions for the M.S. in Ecology at the University of São Paulo)

PRESENTATIONS

Invited talk - Emerging Scholars in Integrative Biology
(Boston University) *March 2023*

Conference talk - American Society of Naturalists
(Pacific Grove, CA) *January 2023*

Workshop talk - 20th Annual UCSC & Stanford Species Interactions Workshop
(UC Santa Cruz) *December 2022*

Invited talk - Symposium on market squid
(NOAA Southwest Fisheries Science Center) *November 2022*

Ph.D. thesis defense - Department of Civil and Environmental Engineering
(Massachusetts Institute of Technology) *May 2022*

Invited talk - Physics of Living Systems
(Massachusetts Institute of Technology) *May 2022*

Invited talk - EcoEncontros at University of São Paulo
(Virtual) *December 2021*

Invited talk - Ecological Resilience Webinar of the British Ecological Society
(Virtual) *September 2021*

Conference talk - Ecological Society of America
(Virtual) *August 2021*

Invited talk - Evolutionary and Ecological Systems Biology talks
(Massachusetts Institute of Technology) *September 2020*

Poster presentation - MIT Quantitative Ecology Meeting
(Massachusetts Institute of Technology) *January 2020*

Conference talk - American Society of Naturalists
(Pacific Grove, CA) *January 2020*

Invited talk - Simple Person's Applied Math Seminar
(Massachusetts Institute of Technology) *September 2019*

Invited talk - Opening lectures of the Graduate Program in Ecology
(University of São Paulo) *March 2018*

Invited talk - III EcoEscola
(University of São Paulo) *January 2017*

Poster presentation - Evolution
(Austin, TX) *June 2016*

TEACHING ASSISTANT

Probability and Causal Inference - 1.010
(Massachusetts Institute of Technology) *Fall 2021*
Planned and conducted recitations

Ecological Dynamics and Modeling - 1.873
(Massachusetts Institute of Technology) *Spring 2021*
Conducted tutorials/discussions and graded problem sets

Probability and Causal Inference - 1.010
(Massachusetts Institute of Technology) *Fall 2020*
Graded problem sets

Ecological Dynamics and Modeling - 1.873
(Massachusetts Institute of Technology) *Spring 2020*

Conducted tutorials/discussions and graded problem sets

Probability and Causal Inference - 1.010
(Massachusetts Institute of Technology) *Fall 2019*
Graded problem sets

III EcoEscola
(University of São Paulo) *January 2017*
Supervised undergraduate student's scientific projects

V Southern-Summer School on Mathematical Biology
(ICTP-SAIFR) *January 2016*
Supervised undergraduate student's scientific projects

Diversity, Natural History and Conservation of South American Vertebrates
(University of São Paulo) *August - December 2015*
Moderated discussions and graded problem sets

R Language for Data Analysis in Ecology
(University of São Paulo) *March 2014*
Moderated tutorials and graded problem sets

PROFESSIONAL SERVICE

Reviewer for the following scientific journals (Web of Science):
Ecology, Ecological Complexity, Ecology Letters, Journal of Animal Ecology, Methods in Ecology and Evolution, Nature Communications, Oikos, PLOS Computational Biology *2018-*

Modeling and data analyses for the
Squid Fishery Advisory Committee of California *February 2023 -*

Judge for student talk prize at the American Society of Naturalists Conference *January 2023*

Data analyses for Covid-19 BR Observatory
(https://covid19br.github.io) *March - May 2020*

Judge for postdoc talk prize at the American Society of Naturalists Conference *January 2020*

Helped organizing the annual Fritz Muller Seminar Series
(University of São Paulo) *2014-2016*

SELECTED COURSES AND INTERNSHIPS

Data Mining (MIT - 15.062) *Fall 2021*

Time Series Analysis (MIT - 14.384) *Fall 2020*

Modeling Environmental Complexity (MIT - 12.586) *Fall 2019*

Machine Learning (Harvard - CS181) *Spring 2019*

Ecological Dynamics and Modeling (MIT - 1.873) *Spring 2019*

Computational Ecology (MIT - 1.871) *Fall 2018*

Winter School on Quantitative Systems Biology (ICTP, 2.5 weeks, virtual) *December 2020*

Workshop on Dynamics of Ecological Networks (ICTP-SAIFR, 1 week) *May 2018*

School on Physics Applications in Biology (ICTP-SAIFR, 3 weeks) *January 2016*

III Southern-Summer School on Mathematical Biology (ICTP-SAIFR, 2 weeks) *January 2014*

Internship at the Laboratory of Environmental and Evolutionary Archeology and Anthropology (University of São Paulo) *March - December 2010*

COMPUTATIONAL SKILLS

- R (advanced)
- Python (basic)
- C (basic)
- Git and GitHub
- LaTeX
- Microsoft Office

LANGUAGES

- Portuguese (native)
- English (fluent)
- Spanish (basic)