

LUCAS P. MEDEIROS

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ACADEMIC APPOINTMENTS

University of California, Santa Cruz 2022 - present
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	<i>August 2021</i>
Best M.S. thesis of 2017 in Ecology at the University of São Paulo	<i>March 2018</i>

FELLOWSHIPS

Ph.D. fellowship - Martin Family Society of Fellows for Sustainability (MIT Environmental Solutions Initiative)	<i>2021 - 2022</i>
Ph.D. scholarship - Swiss Government Excellence Scholarship (declined)	<i>2018</i>
Laboratory technician scholarship - São Paulo Research Foundation (FAPESP) - R\$14,347	<i>2017 - 2018</i>
M.S. scholarship - São Paulo Research Foundation - R\$33,207	<i>2015 - 2017</i>
Scientific Initiation scholarship - São Paulo Research Foundation - R\$6,128	<i>2014</i>
M.S. scholarship - National Council for Scientific and Technological Development (CNPq) - R\$10,500 (1st place in the admissions for the M.S. in Ecology at the University of São Paulo)	<i>2015</i>

PRESENTATIONS

Conference talk - Ecological Society of America (Portland, OR)	<i>August 2023</i>
Invited talk - Emerging Scholars in Integrative Biology (Boston University)	<i>March 2023</i>
Conference talk - American Society of Naturalists (Pacific Grove, CA)	<i>January 2023</i>

Workshop talk - 20th Annual UCSC & Stanford Species Interactions Workshop (UC Santa Cruz)	<i>December 2022</i>
Invited talk - Symposium on market squid (NOAA Southwest Fisheries Science Center)	<i>November 2022</i>
Ph.D. thesis defense - Department of Civil and Environmental Engineering (Massachusetts Institute of Technology)	<i>May 2022</i>
Invited talk - Physics of Living Systems (Massachusetts Institute of Technology)	<i>May 2022</i>
Invited talk - EcoEncontros at University of São Paulo (Virtual)	<i>December 2021</i>
Invited talk - Ecological Resilience Webinar of the British Ecological Society (Virtual)	<i>September 2021</i>
Conference talk - Ecological Society of America (Virtual)	<i>August 2021</i>
Invited talk - Evolutionary and Ecological Systems Biology talks (Massachusetts Institute of Technology)	<i>September 2020</i>
Poster presentation - MIT Quantitative Ecology Meeting (Massachusetts Institute of Technology)	<i>January 2020</i>
Conference talk - American Society of Naturalists (Pacific Grove, CA)	<i>January 2020</i>
Invited talk - Simple Person's Applied Math Seminar (Massachusetts Institute of Technology)	<i>September 2019</i>
Invited talk - Opening lectures of the Graduate Program in Ecology (University of São Paulo)	<i>March 2018</i>
Invited talk - EcoEscola (University of São Paulo)	<i>January 2017</i>
Poster presentation - Evolution (Austin, TX)	<i>June 2016</i>

TEACHING

Instructor for Instituto Serrapilheira's Quantitative Ecology Field Course (Brazilian Amazon) <i>Supervised graduate student's field projects</i>	<i>July 2023</i>
TA for Probability and Causal Inference - 1.010 (Massachusetts Institute of Technology) <i>Planned and conducted recitations</i>	<i>Fall 2021</i>
TA for Ecological Dynamics and Modeling - 1.873	

(Massachusetts Institute of Technology) <i>Conducted tutorials/discussions and graded problem sets</i>	<i>Spring 2021</i>
TA for Probability and Causal Inference - 1.010 (Massachusetts Institute of Technology) <i>Graded problem sets</i>	<i>Fall 2020</i>
TA for Ecological Dynamics and Modeling - 1.873 (Massachusetts Institute of Technology) <i>Conducted tutorials/discussions and graded problem sets</i>	<i>Spring 2020</i>
TA for Probability and Causal Inference - 1.010 (Massachusetts Institute of Technology) <i>Graded problem sets</i>	<i>Fall 2019</i>
TA for EcoEscola Field Course (University of São Paulo) <i>Supervised undergraduate student's field projects</i>	<i>January 2017</i>
TA for Southern-Summer School on Mathematical Biology (ICTP-SAIFR) <i>Supervised graduate student's modeling projects</i>	<i>January 2016</i>
TA for Diversity, Natural History and Conservation of South American Vertebrates (University of São Paulo) <i>Moderated discussions and graded problem sets</i>	<i>August - December 2015</i>
TA for R Language for Data Analysis in Ecology (University of São Paulo) <i>Moderated tutorials and graded problem sets</i>	<i>March 2014</i>

PROFESSIONAL SERVICE

Reviewed manuscripts for the following journals (Web of Science): <i>Ecology, Ecological Complexity, Ecology Letters, Journal of Animal Ecology, Methods in Ecology and Evolution, Nature Communications, Oikos, PLOS Computational Biology</i>	<i>2018 - present</i>
Organized symposium on Population Fluctuations in Ecology at the ESA 2023 Conference (Portland, OR)	<i>August 2023</i>
Conducted and presented modeling/data analyses for the Squid Fishery Advisory Committee of California	<i>February 2023 - present</i>
Conducted modeling/data analyses for Covid-19 BR Observatory (https://covid19br.github.io)	<i>March - May 2020</i>
Judged talks/posters for prizes at 2 ASN and 1 ESA conference	<i>2020 - 2023</i>
Helped organizing the annual Fritz Muller Seminar Series (University of São Paulo, https://fritzmuller.weebly.com)	<i>2014 - 2016</i>

COMPUTATIONAL SKILLS

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

SELECTED COURSES

Time Series Analysis (MIT - 14.384)	<i>Fall 2020</i>
Modeling Environmental Complexity (MIT - 12.586)	<i>Fall 2019</i>
Machine Learning (Harvard - CS181)	<i>Spring 2019</i>
Ecological Dynamics and Modeling (MIT - 1.873)	<i>Spring 2019</i>
Computational Ecology (MIT - 1.871)	<i>Fall 2018</i>
Winter School on Quantitative Systems Biology (ICTP, 2.5 weeks, virtual)	<i>December 2020</i>
Workshop on Dynamics of Ecological Networks (ICTP-SAIFR, 1 week)	<i>May 2018</i>
School on Physics Applications in Biology (ICTP-SAIFR, 3 weeks)	<i>January 2016</i>
Southern-Summer School on Mathematical Biology (ICTP-SAIFR, 2 weeks)	<i>January 2014</i>
Internship at the Laboratory of Environmental and Evolutionary Archeology and Anthropology (University of São Paulo)	<i>March - December 2010</i>

LANGUAGES

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