

# MATHEUS JANUARIO LOPES DE SOUSA

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## EDUCATION

2021 – 2026: **Ph.D. in Ecology and Evolutionary biology**, University of Michigan, USA

2012 – 2019: **Teaching in biology**, University of São Paulo, Brazil

2017 – 2019: **M.Sc. in Ecology**, University of São Paulo, Brazil

2012 – 2016: **B.Sc. in Biological Sciences**, University of São Paulo, Brazil

## PUBLICATIONS ([Google Scholar](#), [ORCID](#))

### All peer-reviewed publications

1. do Carmo R. F. R., Sena P. H. A., de Melo F. P. L., **Januario M.**, Carvalho T., van der Plas F., Wirth C., Reich P. B., Gonçalves-Souza T. (2026) Functional and phylogenetic diversity drive ecosystem functioning through differential interactions with climatic and disturbance gradients. *Ecosphere* (in press).
2. **Januario, M.**, Auler, J.P., Viol A.L., Rabosky D.L. (2026). evolved: open software for teaching Evolutionary biology at multiple scales through virtual inquiries. *Journal of Open Source Education* 9 (96), 300
3. **Januario, M.**, Macedo-Rego R. C., Rabosky D.L. (2025). Evolutionary lability of sexual selection and its implications for speciation and macroevolution. *The American Naturalist*, 205(4), 388-412.
4. **Januario, M.**, Pinsky, M.L., Rabosky D.L. (2025). The Metapopulation Bridge to Macroevolutionary Speciation Rates: A Conceptual Framework and Empirical Test. *Ecology Letters*, 28(1), e70021.
5. **Januario, M.**, (2024). *Evolvability* maps an adaptable research paradigm. *Evolution*, 78(8), 1517-1520.
6. do Rosario Petrucci, B., **Januario, M.**, & Quental, T. (2022). paleobuddy: An R package for flexible simulations of diversification and fossil sampling. *Methods in Ecology and Evolution*, 13(12), 2692-2698. [Paper shortlisted to British Ecological Society's Robert May Prize 2022]
7. **Januario, M.**, & Quental, T. B. (2021). Re-evaluation of the "law of constant extinction" for ruminants at different taxonomical scales. *Evolution*, 75(3), 656-671. [Cited in the 3rd edition of the textbook "Evolution" by Carl T. Bergstrom and Lee A. Dugatkin]

### Published Book Chapters

1. Menezes-e-Vasconcelos, K., Chaves, B. E., **Januario, M.** (2024). Adding shape and color to publications: how to explore photography in plant anatomy and morphology (in portuguese). In: dos Santos , N. H., Santos, I. V. C., dos Santos Júnior, J. L. Falcão, J. G., Martins, M. L., Wu, R. T. A., Furlan, C. M. (Organizers): XIII Winter Course in Botany, 2024. ISBN: 978-65-88234-18-1

### Peer-reviewed publications in press

1. **Januario, M.**, Rabosky D.L. Severe impact of taxon murk on macroevolutionary inference: extinction dynamics in whales revisited.

### Manuscripts in advanced stage of preparation

2. **Januario, M.**, Rabosky D.L. Why are we still estimating extinction from molecular phylogenies?

## MUSEOLOGICAL WORK

2023: Graduate student curatorial assistant, Univ. of Michigan Museum of Zoology, Ann Arbor (MI), USA

Supported the large-scale integration and curation of >40,000 herpetological specimens, processing and organizing material from intake to standardized storage. Digitized and harmonized multiple legacy datasets with full traceability, enhanced records through georeferencing and archival integration, and organized associated field materials to improve research accessibility.

## APPOINTMENTS

May 2026 - Current: Postdoctoral Fellow, Institute for Global Change Biology, Univ. of Michigan.

## FUNDED GRANTS: \$8,580 total

|      |                                                                     |          |
|------|---------------------------------------------------------------------|----------|
| 2023 | Hinsdale & Walker Scholarship, EEB dept., Univ. of Michigan         | \$ 1,580 |
| 2022 | Grad. Res. Excel. Grant R.C. Lewontin E. Award, Soc. Stud. of Evol. | \$ 2,500 |
| 2022 | Ichthyology Grad. Std. Sup, Rackham Grad. School, Univ. of Michigan | \$ 3,000 |
| 2022 | Grad. Std. Research Grant, Rackham Grad. School, Univ. of Michigan  | \$ 1,500 |

## FELLOWSHIPS & Prizes: \$97,600 total

|                                                                                                             |           |
|-------------------------------------------------------------------------------------------------------------|-----------|
| 2026: Tinkle Scholarship Award, University of Michigan Museum of Zoology                                    | \$ 5,000  |
| 2025 – 2026: Rackham Predoctoral Fellowship, Rackham Graduate School, University of Michigan                | \$ 41,000 |
| 2024: Departmental fellowship, Department of Ecology and Evolutionary Biology, University of Michigan       | \$ 12,000 |
| 2024: Research Assistant fellowship, Department of Ecology and Evolutionary Biology, University of Michigan | \$ 12,000 |
| 2022: Departmental fellowship, Department of Ecology and Evolutionary Biology, University of Michigan       | \$ 12,000 |
| 2019: Graduate technical work fellowship, The São Paulo Research Foundation (FAPESP), Brazil                | \$ 4,000  |
| 2019: Undergraduate teaching fellowship, University of São Paulo, Brazil                                    | \$ 800    |
| 2018: Graduate teaching fellowship, University of São Paulo, Brazil                                         | \$ 800    |
| 2017 – 2018: Graduate research fellowship, Nat'l Council for Sci. & Tech. Development (CNPq), Brazil        | \$ 8,000  |
| 2016: Undergraduate research fellowship, The São Paulo Research Foundation (FAPESP), Brazil                 | \$ 2,000  |

## ACADEMIC RECOGNITION

2026: Finalist of the Ernst Mayr Award, Society of Systematic Biologists  
 2026: Outstanding Grad Student Publication Award, Department of Ecology and Evolutionary Biology, University of Michigan  
 2026: Tinkle Award, University of Michigan Museum of Zoology  
 2026: T. H. Huxley Award, Society for the Study of Evolution  
 2025: Rackham Predoctoral Fellowship, Rackham Graduate School, University of Michigan  
 2023: Nominated to the 2022 Outstanding Graduate Student Instructor Award, Department of Ecology and Evolutionary Biology, University of Michigan  
 2022: R.C. Lewontin Early Award, Society for the Study of Evolution  
 2019: Best master's dissertation award - Graduate program in Ecology, University of São Paulo  
 2016: Ranked 1st in the Univ. of São Paulo M.Sc. in Ecology entrance exam among over 35 participants  
 2016: Best academic poster award - 19th Conference of undergraduate research at the University of São Paulo, Brazil

## OPEN-SOURCE SOFTWARE

[evolved](#) (R; author, creator, maintainer); [paleobuddy](#) (R; author; maintainer)

## INVITED SPEAKER

2026: Invited Panelist on Education. Eduardo Gomes High School, São Caetano do Sul (SP), Brazil

2026: Invited Research Seminar, Dept. of Ecology, University of São Paulo, Brazil

2026: Society of Systematic Biologists Ernst Mayr Award Symposium(online) [\[Recording\]](#)

2024: Symposium: “What we can and cannot know through current and upcoming phylogenetic comparative methods”, 3rd Joint Congress of Evolutionary Biology, Montréal (QC), Canada

2024: Grad. Research Excellence Grants Seminar Series of the Society for the Study of Evolution, Online

2024: Invited Research Seminar, Dept. of Ecology and Evolutionary Biology, U. of Michigan (MI), USA

2018: University of São Paulo ‘s Wildlife Studies Group, University of São Paulo (SP), Brazil

## CONFERENCES

### Organizer of Symposia in conferences

Symposium name: [“Cross-Disciplinary Approaches for Understanding Budding Speciation” \(Evolution meeting 2026\)](#) [\[Recording\]](#) – co-organized with Bruno do Rosario Petrucci (Iowa State University).

### Talks

2026: Evolution 2026, Cleveland, (OH), USA

2025: Evolution 2025, Athens (GA), USA

2023: Great Lakes Student Paleoconference, Ann Arbor (MI), USA

2023: Evolution 2023, Albuquerque (NM), USA

2022: Evolution 2022 Cleveland, (OH), USA

2019: Ecol., evol. & diversity symposium @Federal Univ. of São Paulo (UNIFESP) - São Paulo (SP), Brazil

2016: 24th Interna'l symposium of undergrad. research & tech. @USP (SIICUSP) - São Paulo (SP), Brazil

### Posters

Presenting author in all listed below

1. **Januario, M.**, Rabosky, D.L., (2024). Investigating the timescale of trait re- structuration in a Jurassic lake. North American Paleontological Convention 2024 - Ann Arbor (MI), USA
2. **Januario, M.**, Lee, J. L. Schramer, T. D., Viol, A. L. Rabosky, D.L., (2024). Can phylogeny and geography predict squamate insular endemism? Society for the Study of Amphibians and Reptiles Meeting 2024 - Ann Arbor (MI), USA
3. **Sousa, M.**, Quental, T.B., (2016). Secondary sexual characters evolution and diversification in Ruminantia (Mammalia) / *Evolução de caracteres sexuais secundários e diversificação em Ruminantia (Mammalia)* 19ª Semana Temática da Biologia USP - São Paulo, Brazil | 5º Simpósio de ecologia teórica e 1ª Reunião da ABECO - Gramado, Brazil - Gramado, Brazil
4. **Sousa, M.**, Quental, T.B., (2015). The role of sexual size dimorphism in ruminant (Artiodactyla, Mammalia) diversification. Evolution 2015 – Guarujá (SP), Brazil

## WORKSHOPS PROVIDED

1. Comparative Biology and Functional Morphology in the 21st Century **Gans Foundation Student Workshop for the Society for the Study of Amphibians and Reptiles Meeting**, June 2024 (Ann Arbor MI USA)

2. Seeing Through Trees – Intro to Phylogenetic Comparative Methods R Institute for Global Change Biology stats sessions September 2024 (Ann Arbor MI USA)

## TEACHING EXPERIENCE

### Graduate instructor – Graduate-level courses

**1. Evolutionary Processes and Macroevolution** (University of Michigan, 2 semesters); **2. Introduction to Scientific Programming for Evolution and Ecology** (University of Michigan, 1 semester); **3. Use of R language for ecological data analysis** (University of São Paulo, 2 semesters); **4. Macroevolution: Theory and Applications** (University of São Paulo, 1 semester); **5. Southern-Summer School on Mathematical Biology** (Federal University of São Paulo, 2 semesters)

### Graduate instructor – Undergraduate-level courses

**1. BIO 171 Introduction to Biology** (University of Michigan, 1 semester); **2. BIO 173 Introduction to Biology Lab** (University of Michigan, 2 semesters); **3. Supervised Training in Biology Teaching** (University of São Paulo, 1 semester)

### Undergraduate instructor – Undergraduate-level courses

**1. Supervised Training in Biology Teaching** (University of São Paulo, 2 semesters); **2. Virtual ecology: computer simulation models in ecology** (University of São Paulo, 1 semester); **3. Ecology of communities and ecosystems** (University of São Paulo, 1 semester); **4. Biodiversity Conservation** (University of São Paulo, 1 semester); **5. Evolution** (University of São Paulo, 1 semester)

## OTHER PROFESSIONAL EXPERIENCE

2019 – 2020: Data scientist & code developer, University of São Paulo, São Paulo (SP), Brazil  
Created and archived code & analytical pipelines still in use in the laboratory (as of 2026)

## INTERNATIONAL SERVICE

### Peer Review

Evolutionary Journal of the Linnean Society; Journal of Biogeography; Journal of Open Source Education; Methods in Ecology and Evolution; Proceedings of the Royal Society B Biological Sciences; Science Advances; Systematic Biology

### Organizer of Research synthesis working group on budding speciation

Co-organized with Bruno do Rosario Petrucci (Iowa State University).

This group is supported by the Society for the Study of Evolution (SSE) and is designed to serve as a launchpad for novel ideas, new syntheses, and ongoing collaborations. The group involves researchers from USA, Brazil, Canada, Germany, and Australia.

### Conference mentor for early-career researchers

Mentored 10+ PhD students during the SSE Postdoc Fellowship Networking event at the 2026 evolution meeting, 2026.

Mentored PhD student Gustavo Martins as part of Evolution's Bilingual Mentoring Program, 2026.

STRATA (Supporting Tomorrow's Researchers and Today's Advocates) mentor during the North American Paleontological Convention, 2024.

## DEPARTMENTAL SERVICE

### Student representative in department committees

2025–2023 Peer-to-peer mentoring of 4 younger grad students ( “Big/Little Sib program”)

2025–2026 Social Hour (“BioBev”) coordinator

2024 Admissions committee

2022–2023 Social & Retreat Committee

2015–2016 Student Representative in the Departmental Faculty Meeting (University of São Paulo)

### Organizer of academic events for the Univ. of Michigan’s dept of Ecology & Evol. Biology

**2-working day visit from prof. Kjetil Lysne Voje**, from the Natural History Museum of the University of Oslo (Norway). Visit included advanced group discussion, a public roundtable, a seminar to the department, and individual meetings with faculty, students, and other researchers from the university. Organization included scheduling, flights, lodging and meals, all done by Matheus.

### Round table: Is macroevolution more than “microevolution writ large?” (~50 attendants, 90 minutes),

Featuring profs Kjetil L. Voje (U. of Oslo, Norway), L. Lacey Knowles (EEB, U. of Michigan), Lucas N. Weaver (EARTH, U. of Michigan), and Daniel L. Rabosky (EEB, U. of Michigan). Matheus organized, selected, and clarified questions from the dept. before the event, and mediated the live discussion.

### Community outreach in the United States of America:

**ID day at the Museum of Natural History of the University of Michigan (2023/2024/2025)** / Science Communicator

Single day activity, Ann Arbor (MI) - USA

Engaged the public by identifying species, showcasing live animals, 3D models, museum specimens, and other biologic material. Participated as member of the division of Reptiles & Amphibians at the University of Michigan’s Museum of Zoology.

**BIO 173 visit to division of Reptiles & Amphibians at the U. of Michigan’s Museum of Zoology (2024)** / Museum Educator

Single day activity, Ann Arbor (MI) - USA

Toured tens of students from “Introduction to biology” (BIO 173) through the Reptiles & Amphibians division of the University of Michigan’s Museum of Zoology—promoting hands-on scientific observation and student engagement.

**University of Michigan Biological Station’s 2024 BioBlitz** / Associate organismal group expert

Single day activity, Pellston (MI) - USA

Participated in an intensive biodiversity survey documenting species within the biological station, integrating fieldwork, education, and public outreach. Collaborated with students, researchers, and community members to promote biodiversity awareness and hands-on scientific engagement.

### Community outreach in Brazil:

**EcoEscola 2019 (Eco-School)** / Lecturer, Pedagogical leader, and class developer

March 2018 - August 2019, São Paulo - Brazil

I coordinated an Ecology course at the University of São Paulo, training graduate students in active learning strategies to teach Ecology to recent biology graduates. I also designed pedagogical materials and delivered three lectures: “Patterns and Processes in Ecology,” “Interaction Biology,” and “Evolutionary Ecology and Biogeography.”

**Estação Biologia (Biology camp)** / Instructor and class developer

March 2012 - November 2013, São Paulo - Brazil

I contributed to a non-formal education project teaching Biology in underprivileged schools using active learning. I developed lasting activities, including one on micro and macroevolution. I also participated in "Bio na Rua" (Biology on the Streets), an annual community outreach event in São Paulo's underserved areas.

## PROFESSIONAL ORGANIZATIONS AND AFFILIATIONS

2023 – present: Society of Systematic Biologists

2015, 2021 – present: Society for the Study of Evolution

2021 – present: American Association for the Advancement of Science

2024 – 2025: Society for the Study of Amphibians and Reptiles

## MEDIA COVERAGE

[24.IV.2026] [The U-M Museum of Zoology has named Natasha Stepanova \(PhD '26\) and Matheus Januario \(PhD '26\) as the recipients of the 2025 Donald W. Tinkle Scholarship Award](#)

[16.IX.2025] [Till Selection Do Us Part? Testing Sexual Selection's Role in Speciation](#)

[16.X.2023] [Hiss-toric first: U-M museum's 70,000 snake specimens form world's largest research collection](#)

[13.XI.2023] [UMich now has the largest collection of snake specimens in the world](#)

## LANGUAGES

Brazilian Portuguese: native

English, R, Python: fluent