

**Elisa Ramos, Ph.D.**  
**Post-Doctoral Research Associate**  
**University of Wyoming**

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h-index (Google Scholar on Jul 13<sup>th</sup> 2025): 9  
Languages: Portuguese, English, Spanish, German  
Github: [ramoseks](#)  
Net academic age: 3 years and 4 months

#### **EDUCATION**

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- Mar 2018 – Mar 2023    **PhD of Science in Genetics and Molecular Biology, State University of Campinas, Brazil.**  
**Thesis:** Evolutionary genomics in aquatic vertebrates: molecular footprints associated with new environment colonisation.  
Advisor: Prof. Dr. Mariana F. Nery. Examiners: Prof. Dr. Eduardo Eizirik (UFRS), Prof. Dr. Juliana Vianna (PUC-Chile), Prof. Dr. Vera N. Solferini (Unicamp) and Dr. Juliana José (Unicamp).
- Mar 2015 – Mar 2017    **Master of Science in Genetics (Evolutionary and Population Genetics), Federal University of Minas Gerais, Brazil.**  
**Thesis:** Systematics, Phylogeography and conservation of *Pithecopus rohdei* and *Pithecopus megacephalus* (Anura, Phyllomedusidae).  
Advisor: Prof. Dr. Fabrício Rodrigues dos Santos.
- Feb 2010 – Dec 2013    **Bachelor of Sciences in Biological Sciences University of Taubaté, UNITAU, Brazil.**

#### **APPOINTMENTS**

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- Jul 2026 - Present    Post-doctoral Researcher, Department of Zoology and Physiology, College of Agriculture, Life Sciences and Natural Resources, **University of Wyoming**, US  
Project: Eco-physiological mechanisms of adaptation in giant hummingbirds.  
Advisor: Prof. Dr. Jessie Williamson.
- Jun 2025 - Mai 2026    Post-doctoral Fellow, Department of Environmental Sciences, Zoological Institute, **University of Basel**, Switzerland. Project: Dot chromosome evolution and its role in bird diversification. Advisors: Prof. Dr. Walter Salzburger and Prof. Dr. Joana I. Meier.
- Jun 2023 - Mai 2026    Post-doctoral Researcher, Department of Environmental Sciences, Zoological Institute, **University of Basel**, Switzerland; Life Sciences Department, **Natural History Museum Basel**, Basel, Switzerland. Project: Unraveling the genomic origin of species in the fastest Holarctic bird radiation of large white-headed gulls (*Larus* ssp.). Advisor: Dr. David A. Marques.
- Apr 2023 - Mai 2023    Transition into PostDoc position from Brazil to Switzerland.

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|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Apr 2017 - Feb 2018 | Volunteer research in the project: “Inventories and monitoring of butterflies in conservation units of the Atlantic Forest, Brazil” at the State University of Campinas, Brazil. Description: fieldwork - training in butterfly capture, malaise trap assembly and monitoring. |
| Jan 2014 - Dec 2014 | Laboratory Assistant at ACTA Medical Diagnostics, Taubaté, Brazil. Workload: 44 hours per week, Employment Type: Full-time.                                                                                                                                                    |

## RESEARCH STAYS

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| July 2024           | Collaborator Onsite at the <b>Wellcome Sanger Institute and Darwin Tree of Life, Meier Group, Cambridge, UK.</b><br><b>Description:</b> Training in bird reference genome manual curation.<br>Supervisor: Dr. Joana Meier.                                                                                              |
| Sep 2023            | Collaborator Onsite at the <b>Wellcome Sanger Institute and Darwin Tree of Life, Meier Group, Cambridge, UK.</b><br><b>Description:</b> <i>Larus michaellis</i> DNA extraction for reference genome sequencing.<br>Supervisor: Dr. Joana Meier.                                                                         |
| Jan 2021 – Feb 2022 | PhD student internship abroad at Leibniz Institute for Zoo and Wildlife Research: <b>Berlin Center for Genomics in Biodiversity Research, Germany.</b><br>Description: Research in the project “Evolutionary and adaptive insights from high-quality vertebrate genomes” project.<br>Supervisor: Dr. Camila J. Mazzoni. |

## MAJOR ACHIEVEMENTS

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|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Achievement 1 | Since 2024, I have been a collaborator on one major working group for genomic advancement: the Genome Reference Informatics Team (GRIT) at Wellcome Sanger Institute. I received training on high-quality phased genome manual curation, with emphasis in bird genomes, providing me with expertise to prepare excellent genome assemblies, including the curation of dot chromosomes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Achievement 2 | As a PhD student I played a pivotal role in a groundbreaking research project from 2021 to 2022, contributing to the assembly and analysis of the two most contiguous reptile genomes to date: those of the green and leatherback turtles. This collaborative effort involved scientists from Brazil, Germany, and the USA, and was supported by organizations such as the Vertebrate Genome Project and NOAA Fisheries’ Southwest Fisheries Science Center. My specific contributions included manually curating the genome assemblies and using state-of-the-art comparative genomics approaches to analyze gene content. Our findings were partially published in PNAS in early 2023 (Bentley et al. 2023), and a forthcoming paper, with me as the first author, will provide further details (Ramos et al. 2025. <i>Under Review</i> ). In addition to establishing significant genomic resources for sea turtle studies, I identified unique features in these genomes that have implications for future population studies, particularly concerning immunity capacity in green sea turtles and the long-term survival of leatherbacks. |

[1] journal-article. Bentley BP, Carrasco-Valenzuela T, Ramos EKS, Pawar H, Souza Arantes L, Alexander A, Banerjee SM, Masterson P, Kuhlwillm M, Pippel M, et al. 2023. Divergent sensory and immune gene evolution in sea turtles with contrasting demographic and life histories. Proc. Natl. Acad. Sci. U. S. A. 120:e2201076120. <http://dx.doi.org/10.1073/pnas.2201076120>.

[2] journal-article. Ramos E, Hilgers L, Carrasco-Valenzuela T, Picorelli A, Sullivan J, Uliano-Silva M, Bentley B, Scott PA, Hiller M, Shaffer B, Komoroske L, Nery MF, Mazzoni CJ. (2025). Unveiling Marine Adaptations in Turtles Through Comparative Genomics [Manuscript In preparation to Molecular Biology and Evolution].

**Achievement 3** In 2019, 2021, and 2025, I secured three prestigious fellowships: two from the São Paulo Research Foundation (FAPESP), Brazil - a Doctoral Scholarship and a Scholarship Abroad - which funded the research project I designed for my doctoral thesis, and a Junior Research Fellowship at the University of Basel to develop my first independent project. These highly competitive awards underwent rigorous peer-review processes, assessing both the quality of my proposed research and my academic record. Together, they supported my PhD salary and project, an international research internship at the Berlin Center for Genomics in Biodiversity Research (BeGenDiv), Germany, and my first independent postdoctoral project.

### **FELLOWSHIPS**

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| 2025        | Postdoctoral Research Fellowship in Research Fund Junior Researchers Universität Basel. Project: Dot Chromosome evolution and its role in bird diversification - CHF 80,000.00 |
| 2021        | São Paulo Research Foundation (FAPESP): Research Internship Abroad (BEPE) Fellowship - US\$ 29,746.66.                                                                         |
| 2019 - 2023 | São Paulo Research Foundation (FAPESP): Graduate Research Fellowship - US\$ 24,131.93.                                                                                         |
| 2018 - 2019 | Brazilian Federal Agency for Support and Evaluation (CAPES): Graduate Research Fellowship (2018-2019) - US\$ 7,360.61.                                                         |

### **GRANTS, AWARDS AND HONORS**

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| 2026        | Best talk presentation on Biology 2026, Brazilian Society of Genetics.                                                                                                          |
| 2024        | Antelope career program and toolbox. Mentorship & training equal opportunities from the University of Basel (2024) - CHF 4,000.00.                                              |
| Jun 2019    | Evolution Meeting Travel Award: Travel award to attend the Evolution Conference in Rhode Island, USA - US\$500.                                                                 |
| 2016        | Francisco Mauro Salzano Award: Honorable mention for best talk presentation on Evolution Session at the International Congress of Genetics 2016, Brazilian Society of Genetics. |
| 2015 - 2016 | Brazilian Federal Agency for Support and Evaluation (CAPES): Graduate Research Fellowship - US\$ 7,085.08.                                                                      |
| 2013        | Scientific Initiation Program (PIC) scholarship for the University of Taubaté (UNITAU): Undergraduate Fellowship - US\$ 945.                                                    |
| 2013        | Best academic performance on the Biological Sciences course at the University of Taubaté (UNITAU): Merit Award for the year of 2012 - US\$ 354.                                 |
| 2012        | Best academic performance on the Biological Sciences course at the University of Taubaté (UNITAU): Merit Award for the year of 2011 - US\$ 354.                                 |

2012

Scientific Initiation Program (PIC) scholarship for the University of Taubaté (UNITAU): Undergraduate Fellowship - US\$ 945.

## ACADEMIC PRODUCTION

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### Peer-reviewed publications:

19. **Ramos, E.**, Hilgers, L., Carrasco-Valenzuela, T., De Panis, D., Picorelli, A., Sullivan, J., Bentley, B., Komoroske, L., Hiller, M., Nery, M. F., Shaffer, B., & Mazzoni, C. J. (2022). The genomic basis of independent marine transitions in turtles: convergent episodic adaptation and demographic shifts. *Molecular Biology and Evolution*, 39(8), msag114. <https://doi.org/10.1093/molbev/msag114>
18. Nery, M. F., **Ramos, E.**, & Fernandez, R. (2025). Parallel and Convergent Molecular Evolution. In *Encyclopedia of Evolutionary Biology, Reference Module in Life Sciences*. Elsevier.
17. **Ramos, E.**, Schweizer, M., Wu, M. Y., et al. (2025). The genome sequence of the Yellow-legged Gull, *Larus michahellis* Naumann, 1840. *Wellcome Open Research*, 10, 129. <https://doi.org/10.12688/wellcomeopenres.23849.1>
16. Magpali, L., **Ramos, E.**, Picorelli, A., Freitas, L., & Nery, M. F. (2024). Molecular evolution of toothed whale genes reveals adaptations to echolocating in different environments. *BMC Genomics*, 25(1), 1049. <https://doi.org/10.1186/s12864-024-10949-y>
15. Selleghin-Veiga, G., Magpali, L., Picorelli, A., Silva, F. A., Ramos, E., & Nery, M. F. (2024). Breathing air and living underwater: molecular evolution of genes related to antioxidant response in aquatic mammals. *Journal of Molecular Evolution*, 92, 114–126. <https://doi.org/10.1007/s00239-024-10170-3>
14. **Ramos, E.**, Selleghin-Veiga, G., Magpali, L., Daros, B., Silva, F., Picorelli, A., Freitas, L., & Nery, M. F. (2023). Molecular footprints on osmoregulation-related genes associated with freshwater colonization by cetaceans and sirenians. *Journal of Molecular Evolution*, 91(4), 517–533. <https://doi.org/10.1007/s00239-023-10121-6>
13. Magalhães, R. F., **Ramos, E. K. S.**, Bandeira, L. N., Ferreira, J. S., Werneck, F. P., Anciães, M., & Bruschi, D. P. (2024). Integrative species delimitation uncovers hidden diversity within the *Pithecopus hypochondrialis* species complex (Hylidae, Phyllomedusinae) and its phylogeography reveals Plio-Pleistocene connectivity among Neotropical savannas. *Molecular Phylogenetics and Evolution*, 190, 107959. <https://doi.org/10.1016/j.ympev.2023.107959>
12. Bentley, B. P., Carrasco-Valenzuela, T., **Ramos, E. K. S.**, Harvinder, P., Arantes, L. S., Alexander, A., Banerjee, S. M., et al. (2023). Differential sensory and immune gene evolution in sea turtles with contrasting demographic and life histories. *Proceedings of the National Academy of Sciences*, 120(7), e2201076120. <https://doi.org/10.1073/pnas.2201076120>
11. Silva, F. A., Souza, E. M. S., **Ramos, E.**, Freitas, L., & Nery, M. F. (2022). Molecular evolution of genes previously associated to large sizes reveal possible ways to cetacean gigantism. *Scientific Reports*, 12, 13155. <https://doi.org/10.1038/s41598-022-17486-w>
10. Nery, M. F., Rennó, M., Picorelli, A., & **Ramos, E.** (2023). A phylogenetic review of cancer resistance highlights evolutionary solutions to Peto's Paradox. *Genetics and Molecular Biology*, 46(1 suppl 1), e20220119. <https://doi.org/10.1590/1678-4685-GMB-2022-0119>

9. Souza, E. M. S., Freitas, L., **Ramos, E. K. S.**, Selleghin-Veiga, G., Rachid-Ribeiro, M. C., Silva, F. A., ... & Nery, M. F. (2021). The evolutionary history of manatees told by their mitogenomes. *Scientific Reports*, 11(1), 3564. <https://doi.org/10.1038/s41598-021-82709-y>
8. **Ramos, E. K. S.**, Santos, S. C., Kuroki, K. K., Benavalli, L., Vani, G. S., Cobo, V. J., Hayashi, T., Rodrigues, E., & Suda, C. N. (2021). Glycoside hydrolases from the tunics of two Antarctic ascidians (*Ascidia challengerii* and *Pyura bouvetensis*) and the tropical species *Phallusia nigra*. *Polar Biology*, 44(4), 857–863. <https://doi.org/10.1007/s00300-021-02844-3>
7. **Ramos, E. K. S.**, Freitas, L., & Nery, M. F. (2020). The role of selection in the evolution of marine turtles mitogenomes. *Scientific Reports*, 10(1), 12792. <https://doi.org/10.1038/s41598-020-69679-w>
6. Nery, M. F., **Ramos, E. K. S.**, Souza, E. M. S., & Ribeiro, P. G. (2020). Present and prospects of research on Neotropical mammals using genomic approaches. *Mastozoología Neotropical*, 27(1), 31–41. <https://doi.org/10.31687/saremMN.20.27.1.0.03>
5. Andreani, M. L., Freitas, L., **Ramos, E. K. S.**, & Nery, M. F. (2020). Latitudinal diversity gradient and cetaceans from the perspective of MHC genes. *Immunogenetics*, 72(8), 453–462. <https://doi.org/10.1007/s00251-020-01181-z>
4. Magalhães, R. F., Lemes, P., Santos, M. T. T., Mol, R. M., **Ramos, E. K. S.**, Oswald, C. B., ... & Garcia, P. C. (2020). Evidence of introgression in endemic frogs from the campo rupestre contradicts the reduced hybridization hypothesis. *Biological Journal of the Linnean Society*, 131(4), 904–917. <https://doi.org/10.1093/biolinnean/blaa142>
3. **Ramos, E. K. S.**, Magalhães, R. F., Marques, N. C. S., Baêta, D., Garcia, P. C. A., & Santos, F. R. (2019). Cryptic diversity in Brazilian endemic monkey frogs (Hylidae, Phyllomedusinae, *Pithecopus*) revealed by multispecies coalescent and integrative approaches. *Molecular Phylogenetics and Evolution*, 132, 105–116. <https://doi.org/10.1016/j.ympev.2018.11.014>
2. **Ramos, E. K. S.**, Fassina, P. V., & Lemos, M. A. (2018). A mother's gift: consequences of unhealthy diet on offspring metabolism. *The Journal of Physiology*, 596(19), 4575–4577. <https://doi.org/10.1113/JP276707>
1. **Ramos, E. K. S.**, Magalhães, R. F., Sari, E. H. R., Rosa, A. H. B., Garcia, P. C. A., & Santos, F. R. (2017). Population genetics and distribution data reveal conservation concerns for the sky island endemic *Pithecopus megacephalus* (Anura, Phyllomedusidae). *Conservation Genetics*, 18(6), 1427–1438. <https://doi.org/10.1007/s10592-017-0990-2>

**Publications under review, preprint & preparation (Abstracts available upon request):**

9. Carrasco-Valenzuela Tomas, Marins L, **Ramos E**, Suh A, Mazzoni CJ. Recent expansion of Penelope-like retrotransposons in the leatherback turtle *Dermochelys coriacea*. *Preprint on Research square (DOI: https://doi.org/10.21203/rs.3.rs-2864407/v1)*
8. Carrasco-Valenzuela T, **Ramos E**, Mazzoni CJ. Testudine-wide Transposable element exploration: A history of slow evolution and conserved genomes. [*Manuscript In preparation*]
7. **Ramos E**, Helberg M, Wu MY, Schweizer M, Crochet P-A, Salzburger W, Meier J, Marques DA (2025). The genome sequence of the Great Black-backed Gull, *Larus marinus* Linnaeus 1758. [*Manuscript submitted to Wellcome Open Res*].
6. **Ramos E**, Helberg M, Wu MY, Schweizer M, Crochet P-A, Salzburger W, Meier J, Marques DA (2025). The genome sequence of the European Herring Gull, *Larus argentatus argentatus* Pontoppidan 1763. [*Manuscript submitted to Wellcome Open Res*].

5. **Ramos E**, Helberg M, Wu MY, Schweizer M, Crochet P-A, Salzburger W, Meier J, Marques DA (2025). The genome sequence of the Common gull, *Larus canus* Linnaeus, 1758. [Manuscript submitted to Wellcome Open Res].
4. **Ramos E**, Withrow J, Bowie RCK, Bell DA, Wu MY, Schweizer M, Crochet P-A, Salzburger W, Meier J, Marques DA (2025). The genome sequence of the Western Gull, *Larus occidentalis* Audubon 1839. [Manuscript submitted to Wellcome Open Res].
3. **Ramos E**, Withrow J, Winker J, Bell DA, Ciccerio C, Bowie RCK, Wu MY, Schweizer M, Crochet P-A, Salzburger W, Meier J, Marques DA (2025). The genome sequence of the Glaucous-winged gull, *Larus glaucescens* Naumann, 1840. [Manuscript submitted to Wellcome Open Res].
2. **Ramos E**, Descamps S, Helberg M, Wu MY, Schweizer M, Crochet P-A, Salzburger W, Meier J, Marques DA (2025). The genome sequence of the Glaucous gull, *Larus hyperboreus* Gunnerus, 1767. [Manuscript submitted to Wellcome Open Res].
1. **Ramos E**, Sierra P, Carrasco-Valenzuela T, Schweizer M, Wu MY, Helberg M, Descamps S, Ciccerio C, Bell DA, Bowie RCK, Withrow JJ, Winker K, Crochet PA, Salzburger W, Meier JI, Marques DA. Comparative speciation genomics of the rapidly radiating seagull clade. [Manuscript In preparation].

## SCIENCE COMMUNICATION

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| Feb 2026 | <b>Ramos E</b> . Exploring genome structure evolution in birds and insights from the rapid radiation of <i>Larus</i> gulls (ERGA Satellite Meeting, Neuchâtel, Switzerland). <i>Talk</i>                                                                               |
| Feb 2026 | <b>Ramos E</b> . Genome structure evolution in birds and insights from the rapid radiation of <i>Larus</i> gulls (Biology 2026, Neuchâtel, Switzerland.). <i>Talk</i> .                                                                                                |
| Oct 2025 | <b>Ramos E</b> . Genome structure evolution in the rapid radiation of large white-headed gulls. (Understanding Life: Using Largescale Biodiversity Reference Genomes, Wellcome Genome Campus, UK and Virtual). <i>Talk</i> .                                           |
| Mar 2025 | <b>Ramos E</b> . Discussion Leader at the Gordon Research Seminar on Speciation held at Four Points Sheraton / Holiday Inn Express in Ventura, California, United States. Talk: Genomics of Speciation.                                                                |
| Mar 2025 | <b>Ramos E</b> . Exploring genome structure evolution in the rapid radiation of large white-headed gulls. (Speciation Gordon Research Conference - Proximate Mechanisms and Ultimate Consequences of Speciation, Ventura, United States). <i>Poster Presentation</i> . |
| Nov 2024 | <b>Ramos E</b> . Exploring genome structure evolution in the rapid radiation of large white-headed gulls. (EMBO Evolutionary and Comparative Genomics, Nafplion, Greece). <i>Poster Presentation</i> .                                                                 |
| Oct 2024 | <b>Ramos E</b> . Exploring genome structure evolution in the rapid radiation of large white-headed gulls. (Biodiversity Genomics 24, Online, Switzerland). <i>Poster Presentation</i> . Abstract: <a href="#">available online</a> .                                   |
| Jan 2024 | <b>Ramos E</b> . Sea turtle comparative genomics and the molecular footprints of their return to the sea. (Biology 24, Zurich, Switzerland). <i>Poster Presentation</i> .                                                                                              |
| Dec 2023 | <b>Ramos E</b> . Returning to the sea: the evolutionary signatures within sea turtle whole genomes. Science round - Natural History Museum Basel - <i>Talk</i> .                                                                                                       |
| Feb 2023 | <b>Ramos E</b> , Carrasco-Valenzuela T, Bentley BP, Nery MF, Komoroske LM, Mazzoni C. Using comparative genomics approaches to explore the molecular footprints of marine adaptation in sea turtle genomes. (Sea Turtle Genomes Forum 2023) - <i>Talk</i> .            |

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| Oct 2022 | <b>Ramos E</b> , Picorelli A, Silva FA, Selleghin-Veiga G, Freitas L, Nery MF. Molecular footprints on osmoregulation system associated with new environment colonisation in neotropical aquatic mammals (SMBE Satellite Meeting - Montevideo UY) - <i>Poster presentation</i> . |
| Sep 2021 | <b>Ramos E</b> , Carrasco-Valenzuela T, Bentley BP, Nery MF, Komoroske LM, Mazzoni C. Digging for genomic differences in the highly conserved ancient genomes of two sea turtle species. (Biodiversity Genomics 2021) - <i>Talk</i> : <a href="#">available online</a> .         |
| Jul 2019 | <b>Ramos E</b> , Freitas L, Nery MF. How to make a sea turtle: molecular signatures of positive selection on <i>Chelonia mydas</i> genome. (Brazilian Congress of Herpetology (CBH), Campinas, Brazil - <i>Poster Presentation</i> .                                             |
| Jun 2019 | <b>Ramos E</b> , Freitas L, Nery MF. How to make a chelonian: molecular signatures of positive selection on turtles from different habitats. (Evolution Meeting – Providence, Rhode Island, USA) - <i>Poster presentation</i> .                                                  |
| Jun 2019 | Nery MF, <b>Ramos E</b> , Freitas L. Mitogenome molecular evolution on sea turtles. (Evolution Meeting – Providence, Rhode Island, USA) - <i>Talk</i> .                                                                                                                          |

### Selected Media

Public press articles written by scientific journalists covering my research:

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| May 2023 | Julião, A. Genetic sequencing of sea turtles can help understand disease that threatens species. <b>Agência Fapesp</b> . <a href="#">Link to article</a> .                                                    |
| Jan 2023 | Incorvaia D. Unlocking the genes that made whales into giants. <b>The New York Times - Science Newsletter</b> . <a href="#">Link to article</a> .                                                             |
| Feb 2023 | Max Planck Institute of Molecular Cell Biology and Genetics (MPI-CBG: MPI News & Outreach: latest news). Scientists unveil the highest quality map of sea turtles' genomes. <a href="#">Link to article</a> . |

### TEACHING EXPERIENCE

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| Mar 2026       | Lecturer at the Block course: Zoology and Evolutionary Biology at Universitat Basel: Speciation genomics (1.5 hours).                                                                                                  |
| May 2023       | Instructor of the course: Comparing genomes in coding regions (1.5 hours) at GenoTropics Consortium Workshop: Biodiversity Genomics - Genomic methods applied to non-model species.                                    |
| Mar – Jul 2022 | Teaching Internship - Teaching Internship Program of Statue University of Campinas, Brazil, Teaching Activities (12 hours per week) - Discipline: Evolution - "Programa de Formação Interdisciplinar Superior" PROFIS. |
| Mar – Jul 2020 | Teaching Internship - Teaching Internship Program of Statue University of Campinas, Brazil, Teaching Activities (12 hours per week) - Discipline: Evolution - "Programa de Formação Interdisciplinar Superior" PROFIS. |
| Mar – Jul 2019 | Teaching Internship - Teaching Internship Program of Statue University of Campinas, Brazil, Teaching Activities (12 hours per week) - Discipline: Evolution - "Programa de Formação Interdisciplinar Superior" PROFIS. |
| Aug – Dec 2015 | Teaching Internship - Post-Graduation - EVOLUTION - Teaching Activities (12 hours per week) - Discipline: Evolution, Federal University of Minas Gerais.                                                               |



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| 2011 – 2012 | Exhibition guide at Serviço Social do Comércio, Taubaté, Brazil. Exhibitions “Penso Logo Existo?” (2012), “As Palavras e o Mundo” (2011) and “Na Outra Margem: O Rio Paraíba do Sul” (2013) |
| 2010 – 2012 | Exhibition guide at Natural History Museum of Taubaté, Taubaté, Brazil.                                                                                                                     |

## STUDENT MENTORING

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1. Daniel Siamaki Vaquero (2026). Project: Gene family expansion and contraction in *Larus* gulls. Undergraduate student. Block Course Zoology & Evolutionary Biology, Department of Environmental Sciences, University of Basel, Basel, Switzerland.
2. Samir Natarajan (2026). Project: Gene family expansion and contraction in *Larus* gulls. Undergraduate student. Block Course Zoology & Evolutionary Biology, Department of Environmental Sciences, University of Basel, Basel, Switzerland.
3. Meng Yue Wu (2023-2025). Project: Genomic architecture of reproductive isolation across the Large-White-Headed Gull speciation continuum. PhD student. Department of Environmental Sciences, University of Basel, Basel, Switzerland.
4. Leticia Magpali (2022). Project: Molecular evolution of toothed whale genes reveals adaptations to hearing in different environments. PhD student. State University of Campinas, Brazil.
5. Giovana Selleguin-Veiga (2022). Project: molecular evolution of genes related to antioxidant response in cetaceans and pinnipeds. PhD students. State University of Campinas, Brazil.

## SERVICE

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### University

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| 2018 – 2020 | <b>Student Representative</b> at the Graduate Committee for the Department of Genetics and Molecular Biology at the State University of Campinas (UNICAMP), Brazil.              |
| 2021        | <b>Student representative</b> on the committee for development of the scientific event “GBMeeting” at the State University of Campinas (UNICAMP), Brazil.                        |
| 2020        | <b>Student representative</b> on the committee for the development of the scientific event “GBMeeting” at the State University of Campinas (UNICAMP), Brazil.                    |
| 2019        | <b>Student representative</b> on the committee for the conception and development of the scientific event “GBMeeting” at the State University of Campinas (UNICAMP), Brazil.     |
| 2019        | <b>Student representative</b> on the committee for the conception and development of the scientific event “Evolution Day” at the State University of Campinas (UNICAMP), Brazil. |

### Professional

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| 2024 - Present | <b>Reviewer</b> for the Scientific Journals:<br>Molecular Biology and Evolution   Oxford Academic<br>Wellcome Open research.<br>Molecular Biology Reports   Springer Nature |
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## MEMBERSHIPS

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2023 - Present      Society for Molecular Biology and Evolution (SMBE).  
 2018 - Present      Sociedade Brasileira de Genética (SBG).

## FIELD WORK EXPERIENCE

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Apr - May 2024      Poland: Gull population study In Szczecin, Ustka and Włocławek, Field Assistant. Activities: Conducted field sampling across natural island lakes and urban rooftops. Captured gulls using custom-made bird traps, recorded morphological features, assisted with blood sample collection, and released the birds.

Jan 2024      Norway: Gull population study in Oslo; Field Assistant. Activities: Conducted field sampling across urban landscapes. Captured gulls, recorded morphological features, assisted with blood sample collection, and released the birds.

2018 - 2019      Brazil: Field Assistant at the project “Inventories and monitoring of butterflies in conservation units of the Atlantic Forest”. Serra do Japi - SP. Activity: Conducted active and passive sampling of butterfly populations using aerial sweep nets and Malaise traps to collect field data.

2016      Brazil: Monkey-frog population survey project (*Pithecopus* spp.). Field Assistant. Federal University of Minas Gerais; Areas: State Park of Serra do Cabral (Mar), National Park of Serra do Cipó (Nov) and Natural Municipal Park Augusto Ruschi (Dec).

2012 - 2013      Brazil: Field Assistant at the project “Inventories and monitoring of butterflies at Parque Natural Municipal do Trabiçu - SP. Activity: Conducted active and passive sampling of butterfly populations using aerial sweep nets and Malaise traps to collect field data.

## COMPLEMENTARY TRAINING AND SKILLS

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Feb 2026      Machine Learning for Multi-Omics Integration (Physalia Courses).

Mar-Dec 2024      Systematic planning and development of academic careers and preparation for future leadership and management assignments (Antelope Career Program for female academics - University of Basel).

Dec 2024      Genomic Structural Variant detection and comparison (Physalia Courses).

Nov 2021      Eukaryotic Genome Assembly using PacBio and Hi-C (Physalia Courses).

Dec 2019      Biology, Ecology and Conservation of the Gray Dolphin (*Sotalia guianensis*). (Cananéia Research Institute - IPEC, Brasil)

Oct 2019      Linux server management for biological data analysis. (LABIS -USP/ Unicamp).

Feb 2018      Computational algorithms and techniques for genome assembling and analysing (Central Laboratory of High-Performance Technologies, LACTAD, Unicamp).

2010 – 2012      Internship at Taubaté Natural History Museum, Taubaté, Brazil - Exhibition guide and Taxidermist trainee.

## Genetic techniques:

*Lab techniques:* Protein Purification, PCR, Sanger Sequencing, DNA extraction.

*Analysis:* Population Genetics: sequence alignment, molecular phylogenetics and evolution (Mr Bayes, Beast, Migrate), Species delimitation (BPP, iBPP).

*Genome assembly:* genome quality (FastQ), genome trimming (Trimmomatic), genome assembly (SPADES, SOAPdenovo), assembly assessment (Busco), gene prediction (Augustus, MAKER2), manual curation (Pretext).

*Comparative Genomics:* Orthology (Orthofinder), Phylogeny (Bayesian, ML), Positive Selection (PAML, HiPhy, FITMODEL), GO enrichment analysis (Panther), Gene family evolution (CAFE5), Genomic structural variant detection and comparison (Sniffles2), Transposable Elements Annotation (EDTA2 and EarlGrey), Ortholog Annotation (TOGA).

**Bioinformatics:** Trained in the languages R, bash and Python.

## **RESEARCH STATEMENT:**

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I am Dr Elisa Ramos, an evolutionary geneticist and comparative genomicist currently serving as a Post-Doctoral Research Associate at the University of Wyoming. With a Ph.D. in Genetics and Molecular Biology from the State University of Campinas, my career is driven by the potential of advanced genomic resources to transform our understanding of the diversity of the Tree of Life. My research program focuses on uncovering the molecular mechanisms underlying species diversification and adaptation through several fundamental questions: How does genome architecture, such as dot chromosomes, influence speciation? What are the adaptive footprints of environmental transitions, particularly the land-to-water transition in aquatic vertebrates? How can genomics resolve "cryptic" biodiversity through an integrative taxonomic approach? And what role does natural selection play in core physiological systems like osmoregulation and antioxidant response?

I have worked with world-leading institutes like the Wellcome Sanger Institute and projects such as the European Reference Genome Atlas, as well as academic centers and natural history museums across Brazil, Germany, Switzerland, and the USA. My expertise lies in a multidisciplinary approach that integrates fieldwork, laboratory techniques, and cutting-edge bioinformatics. I have extensive experience in comparative genomics, vertebrate evolution, high-quality manual genome curation, species delimitation, phylogeography and international collaboration.

I aim to lead an innovative program focused on how genomic variation supports South American biodiversity. By combining high-resolution genomics with integrative phenotypic data and natural history to advance evolutionary knowledge, I seek to uncover South America's hidden biodiversity. My goal is to inform conservation efforts that address the biodiversity crisis on this continent and support the sustainable management of Neotropical genetic heritage in accordance with frameworks like the Kunming-Montreal Global Biodiversity Framework.

## **CONTACT INFORMATION FOR THREE REFERENCES:**

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1. Prof. Dr. Joana Isabel Meier - Darwin Tree of Life, Wellcome Sanger Institute, United Kingdom, [jm66@sanger.ac.uk](mailto:jm66@sanger.ac.uk) (Post-Doc Advisor).
2. Prof. Dr. Walter Salzburger - Department of Environmental Sciences, University of Basel, Switzerland, [walter.salzburger@unibas.ch](mailto:walter.salzburger@unibas.ch) +41 61 207 03 00 (Post-Doc Advisor).
3. Prof. Dr. Mariana Freitas Nery - Biology Institute, State University of Campinas, SP Brazil, [marinery@unicamp.br](mailto:marinery@unicamp.br) +55 19 35211431 (PhD Advisor).