

# VINICIUS AUGUSTO GALVÃO BASTAZINI


## Summary

I have a broad (and when I say broad, I mean broad!) interest in Ecology, Evolutionary Biology and Conservation Biology, but my main interest lies in understanding the interplay between ecological and evolutionary dynamics and its consequences to patterns of biological diversity and species interactions. I address these kinds of questions by combining aspects of phylogenetics, network and functional ecology, using species traits as a biological building block to understand eco-evolutionary dynamics and their consequences to ecological communities and ecosystems services.




## EDUCATION


2011  
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2015

- **Doctor of Science**  
Federal University of Rio Grande do Sul\*  Porto Alegre, Brazil  
  
Dissertation: Integrating Evolutionary and Ecological Processes in the Study of Interaction Networks.  
  
\*Title recognized by the University of Lisbon 2019

2009  
|  
2011

- **Master's degree in Ecology**  
Federal University of Rio Grande do Sul  Porto Alegre, Brazil  
  
Thesis: Effects of Habitat and Spatial Structure on Mammalian Diversity in Northern Pantanal: A Fine Grain Approach

2004  
|  
2007

- **Bachelor of Science in Ecology**  
Catholic University of Pelotas  Pelotas, Brazil  
  
Undergraduate Thesis: Spatial Analysis of the Trophic Ecology of the Neotropical Otter (*Lontra Longicaudis*) (Olfers, 1818) (Mustelidae: Lutrinae)




## PROFESSIONAL EXPERIENCE

2021  
|  
present

- **Researcher / Professor**  
University of Evora  Evora, Portugal

2020

- **Research Fellow**  
Federal University of Rio Grande do Sul - Road and Railroad Ecology Center  
 Porto Alegre, Brazil


2017  
|  
2019

- **Post-doctoral Researcher**  
French National Center for Scientific Research  Moulis, France



## CONTACT INFO


 [bastazini.vinicius@gmail.com](mailto:bastazini.vinicius@gmail.com)

 [vinicius.bastazini](https://twitter.com/vinicius.bastazini)

 [github.com/bastazini](https://github.com/bastazini)

 [Research Gate](https://www.researchgate.net/profile/Vinicius-Bastazini)

 [Google Scholar](https://scholar.google.com/citations?user=...)

 [0000-0001-5270-0621](https://orcid.org/0000-0001-5270-0621)

## EXPERTISE

Biogeography

Community Ecology

Conservation Biology

Complex Networks

Evolutionary Ecology

Functional Ecology

- 2016 ● **Research Fellow**  
Federal University of Rio Grande do Sul - Laboratory of Quantitative Ecology  
📍 Porto Alegre, Brazil
- 2013 ● **Professor Biostatistics**  
Catholic University of Pelotas - Specialization in Conservation Biology  
📍 Pelotas, Brazil
- 2008 ● **Research Fellow**  
Catholic University of Pelotas  
📍 Pelotas, Brazil
- 2008 | 2009 ● **Research Fellow**  
Federal University of Rio Grande do Sul  
📍 Porto Alegre, Brazil
- 2006 | 2010 ● **Co-founder and Member of the Executive Committee**  
Pró-Pampa Institute  
📍 Pelotas, Brazil



## PUBLICATIONS

### ● PEER-REVIEWED ARTICLES

Under review

- **Elevational shifts in tree community composition in the Brazilian Atlantic Forest**  
*Journal of Vegetation Science*

Bergamin, R.S., **Bastazini, V.A.G.**, Esquivel-Muelbert, A., Bordin, K., Klipel, J., Debastiani, V., Vibrans, A., Loyola, R., Müller, S.

2023

- **Network and parasitological analyses reveal latitudinal gradient in bats-ectoparasitic flies interactions across the Neotropic**

*Ecology and Evolution* 13(9): e10527

Biz, L. **Bastazini, V.A.G.**, Carvalho, F., Pereira, M.J.R.

2022

- **The role of evolutionary modes for trait-based cascades in mutualistic networks**

*Ecological Modelling* 470: 109983

**Bastazini, V.A.G.**, Debastiani, V., Cappelatti, L., Guimarães, P., & Pillar, V.P.

2022

- **Ecological network complexity scales with area**

*Nature Ecology and Evolution* 6: 307–314

Galiana, N., Lurgi M., **Bastazini, V.A.G.**, Bosch, J., Cagnolo, L., Cazelles, K., Claramunt-López, B., Emer, C., Fortin, M., Grass, I., Hernández-Castellano, C., Jauker, F., Leroux, S.J., McCann, K., McLeod, A.M., Montoya, D., Mulder, C., Osorio-Canadas, S., Reverté, S., Rodrigo, A., Steffan-Dewenter, I., Traveset, A., Valverde, S., Vázquez, D.P., Wood, S.A., Gravel, D., Roslin, T., Thuiller, W. & Montoya, J.M.

- 2022 ● **Native and alien grassland diversity respond differently to environmental and anthropogenic drivers across spatial scales**  
*Journal of Vegetation Science* 33(3): e13133  
 Bergamin, R S., Ascensão, F., Capinha, C., **Bastazini, V.A.G.**, Andrade, B. O., Boldrini, I. I., Lezama, F., Altesor, A., Perelman, S., & Overbeck, G.E.
- 2022 ● **Mainstreaming ecological connectivity in road environmental impact assessments: a long way to go**  
*Impact Assessment and Project Appraisal* 40 (6): 475-480  
 Gonçalves, L.O., Kindel, A., **Bastazini, V.A.G.**, & Teixeira, F.Z.
- 2021 ● **Phylogenetic uncertainty and the inference of patterns in community ecology and comparative studies**  
*Oecologia* 196: 633–647  
 Debastiani, V., **Bastazini, V.A.G.** & Pillar, V.P.
- 2021 ● **Using phylogenetic information to impute missing functional trait values in ecological databases**  
*Ecological Informatics* 63: 101315  
 Debastiani, V., **Bastazini, V.A.G.** & Pillar, V.P.
- 2021 ● **The impact of climate warming on species diversity across scales: Lessons from experimental meta-ecosystems**  
*Global Ecology and Biogeography* 30 (7): 1545-1554  
**Bastazini, V.A.G.** Galiana, N., Hillebrandt, H., Estiartes, M., Ogayas, R., Peñuelas, J., Sommer, U. & Montoya, J. M.
- 2020 ● **Species richness and patterns of overdispersion, clustering and randomness shape phylogenetic and functional diversity-area relationships in habitat islands.**  
*Journal of Biogeography* 47 (8): 1638-1648  
 Dias, R. A., **Bastazini, V.A.G.**, Kock, B., Bonow, F. C., Sanyvan, M. S. & Gianuca, A. T. 2020.
- 2020 ● **Including rewiring in the estimation of the robustness of mutualistic networks**  
*Methods in Ecology and Evolution* 11 (1): 106-116  
 Vizentin-Bugoni, J., Debastiani, V.J., **Bastazini, V.A.G.**, Maruyama, P.K. & Sperry J.H
- 2020 ● **NEOTROPICAL CARNIVORES: a dataset of occurrence of carnivores in the Neotropics.**  
*Ecology* 101 (11): e03128  
 Nagy-Reis, M.B.,[...], **Bastazini, V. A. G.**, et al.
- 2020 ● **NEOTROPICAL ALIEN MAMMALS: a dataset of occurrence and abundance of alien mammals in the Neotropics**  
*Ecology* 101 (11): e03115.  
 Rosas, C., [...], **Bastazini, V. A. G.**, et al.

- 2019 ● **Loss of generalist plant species and functional diversity decreases the robustness of a seed dispersal network**  
*Environmental Conservation* 46 (1): 52-58.  
Bastazini, V. A. G., Debastiani, V., Azambuja, B., Guimarães, P., & Pillar, V.
- 2019 ● **NEOTROPICAL XENARTHANS: a data set of occurrence of xenarthran species in the Neotropics**  
*Ecology* 100(7): e02663  
Santos, P.,[ ...], Bastazini, V. A. G., et al.
- 2018 ● **Assessing sampling sufficiency of network metrics using bootstrap**  
*Ecological Complexity* 36: 268-275  
Casas, G., Bastazini, V. A. G., Debastiani, V. J., & Pillar, V. D. P. 2018.
- 2018 ● **Environmental predictors of demography in the tuco-tuco of the dunes (*Ctenomys flamarioni*)**  
*Mastozoología Neotropical* 25 (2): 293-304  
Garcias, F. M., Stolz J., Fernández G. P, Kubiak B. B, Bastazini, V. A. G. & Freitas T. R. O.
- 2018 ● **Reptile road-kills in Southern Brazil: Composition, hot moments and hotspots**  
*Science of the Total Environment* 615: 1438-1445  
Gonçalves, L. O., Alvares, D. J., Teixeira, F. Z., Schuck, G., Coelho, I. P., Esperandio, I. B., Anza, J., Beduschi, J., Bastazini, V. A. G. & Kindel, A.
- 2017 ● **Untangling the tangled bank: A novel method for partitioning the effects of phylogenies and traits on ecological networks**  
*Evolutionary Biology* 44: 312–324  
Bastazini, V. A. G., Abreu, P. M., Azambujo, B., Casas, G., Debastiani, V., Guimarães Jr, P. R. & Pillar, V. P.
- 2017 ● **Livestock disturbance in southern Brazilian grasslands influences avian species diversity via turnover**  
*Biodiversity and Conservation* 26: 2473–2490  
Dias, R. D., Gianuca, A., Vizentin-Bugoni, J., Bencke, G. A. & Bastazini, V. A. G.
- 2017 ● **Linking beta diversity patterns to protected areas: Lessons from the Brazilian Atlantic Forest**  
*Biodiversity & Conservation* 26: 1557–1568.  
Bergamin, R. S., Bastazini, V.A.G., Vélez-Martin, E., Debastiani, V., Zanini, K. J., Loyola, R. & Müller, S.C.

- 2016 ● **Implications of climatic seasonality on activity patterns and resource use by sympatric peccaries in northern Pantanal**  
*International Journal of Biometeorology* 60: 421-433  
Hofmann, G. S., Coelho, I. P., **Bastazini, V. A. G.**, Cordeiro, J. L. P. & Oliveira, L.F. B.
- 2015 ● **Choosing and using traits in functional diversity research**  
*Environmental Conservation* 42: 104-107  
Lefcheck, J., **Bastazini, V. A. G.** & Griffin, J. N.
- 2015 ● **Taxonomic and functional diversity of woody plant communities on opposing slopes of inselbergs in southern Brazil**  
*Plant Ecology and Diversity* 8: 187-197  
Carlucci, M. B., **Bastazini, V. A. G.**, Hofmann, G. S., Macedo, J.H., Iob, G., Duarte, L. D. S., Hartz, S.M. & Müller S.C.
- 2014 ● **Climate effects on amphibian distribution depend on phylogenetic scale and biogeography**  
*Global Ecology and Biogeography* 23: 213-222  
Duarte, L. S., Both, C., Carlucci, M., Debastiani, V., Cappelatti, L., Seger, G., Salengue, E., **Bastazini, V. A. G.**, Gonçalves, L. O., Brum, F. T. & Bernardo-Silva, J.
- 2014 ● **Bird-habitat associations in coastal rangelands of southern Brazil**  
*Iheringia - Série Zoologia* 104: 200-208  
Dias, R. A., Gianuca, A. T. & **Bastazini, V. A. G.**
- 2013 ● **Independent and shared effects of environmental features and space driving avian community beta-diversity across a coastal gradient in southern Brazil**  
*Austral Ecology* 38: 864-873  
Gianuca, A. T., **Bastazini, V. A. G.**, Dias, R. A. & Hernández, M. 2013.
- 2013 ● **Shifts in composition of avian communities related to temperate-grassland afforestation in southeastern South America**  
*Iheringia - Série Zoologia* 103: 12-19  
Dias, R. A., **Bastazini, V. A. G.**, Gonçalves, M. S. S., Bonow, F. C. & Müller, S.
- 2013 ● **Feeding ecology of *Lontra longicaudis* in the lower Arroio Grande, southernmost Brazil**  
*Anais da Academia Brasileira de Ciências* 85: 285-294  
Sousa, K. S., **Bastazini, V. A. G.** & Colares, E. P.

- 2012 ● **Abundance of *Conepatus chinga* (Carnivora: Mephitidae) and other medium-sized mammals in grasslands of southern Brazil**  
*Iheringia - Série Zoologia* 102: 303-310  
 Kasper, C. B., Bastazini, V. A. G., Soares, J. B. G. & Freitas, T. R. O.
- 2009 ● **First breeding record of the bay-capped wren-spinetail (*Spartonoica maluroides*) in Brazil, with nest and nestling descriptions and nesting behavior notes**  
*Iheringia - Série Zoologia* 99: 449-455. 2009  
 Dias, R. A., Gonçalves, M. S. S. & Bastazini, V. A. G.
- 2008 ● **Trophic ecology and the use of shelters and latrines by the Neotropical otter (*Lontra longicaudis*) in the Taquari Valley, Rio Grande do Sul, Brazil**  
*Iheringia - Série Zoologia* 98: 1-6  
 Kasper, C. B., Bastazini, V. A. G., Salvi, J. & Grillo, H. C. Z.
- **BOOKS AND BOOK CHAPTERS**
- In press ● **Road effects on biotic interactions**  
 In: (eds) D'Amico, M., Barrientos, R., Ascensão, F. *Road Ecology: Synthesis and Perspectives*. Elsevier Science Publishing Co.  
 Mestre, F., Quiles, P., Bastazini, V.A.G., Ascensão, F.
- In press ● **Biodiversidade e conservação de ecossistemas aquáticos do sul do Brasil (Biodiversity and conservation of aquatic ecosystems in southern Brazil).**  
 USEB  
 Gonçalves, M., Bastazini, V.A.G., Andretti, C., Lanés, L. E., Volcan, M.
- In press ● **Identificando o potencial de conservação de áreas úmidas usando ferramentas da teoria de redes complexas (Unravelling the conservation potential of wetlands using complex network tools)**  
 In: (eds) Gonçalves, M., Bastazini, V.A.G., Andretti, C., Lanés, L. E., Volcan, M. *Biodiversidade e conservação de ecossistemas aquáticos do sul do Brasil*. USEB  
 Bastazini, V. A. G., Gianuca, A.T., Vizentin-Bugoni J., Gonçalves, M.S.S., & Dias R.A.
- In press ● **Ecossistemas Aquáticos Continentais do sul do Brasil: Contexto histórico e desafios para a conservação (Aquatic Ecosystems of Southern Brazil: Historical Context and Challenges for Conservation)**  
 In: (eds) Gonçalves, M., Bastazini, V.A.G., Andretti, C., Lanés, L. E., Volcan, M. *Biodiversidade e conservação de ecossistemas aquáticos do sul do Brasil*. USEB  
 Gonçalves, M., Bastazini, V.A.G., Andretti, C., Lanés, L. E., Volcan, M.

In press.

● **A fragmentação afeta a dinâmica das populações do arredio-do-gravatá (*Limnortyx curvipennis*) em manchas de áreas úmidas continentais (Habitat fragmentation compromises the population dynamic of the Straight-billed Reedhaunter in continental wetlands)**

In: (eds) Gonçalves, M., Bastazini, V.A.G., Andretti, C., Lanés, L. E., Volcan, M. *Biodiversidade e conservação de ecossistemas aquáticos do sul do Brasil*. USEB

Gonçalves M. S., Pons, P., Bonow, F., Bastazini, V. A. G., Gil-Delgado, J. & Iborra, G.L.

2013

● **Fauna da Reserva Particular do Patrimônio Natural SESC Pantanal: uma perspectiva através de armadilhas fotográficas (Fauna of the SESC Pantanal Natural Heritage Private Reserve: a perspective through camera traps).**

SESC Publishing Co. ISBN: 978-85-89336-99-4

Hoffman, G. S., Bastazini, V. A. G., Coelho, I. P., Oliveira, L. F. B.



## TEACHING EXPERIENCE

2022

|  
present

● **Biogeography**

University of Evora

📍 Evora, Portugal

2017

● **Biostatistic using R**

Dep. Botany - Federal University of Rio Grande do Sul

📍 Porto Alegre, Brazil

2014

● **Introduction to Quantitative Ecology**

Federal University of Pelotas

📍 Pelotas, Brazil

2011

|

2013

● **Theoretical Ecology**

Federal University of Rio Grande do Sul

📍 Porto Alegre, Brazil

2013

● **Introduction to Quantitative Ecology**

Zoo-botanic Foundation of Rio Grande do Sul

📍 Porto Alegre, Brazil

2013

● **Introduction to R**

Pontifical Catholic University of Rio Grande do Sul

📍 Porto Alegre, Brazil

2012

● **Introduction to Quantitative Ecology**

Federal University of Pelotas

📍 Pelotas, Brazil

2011

● **Quantitative Methods Applied to Ecology**

Federal University of Rio Grande do Sul

📍 Porto Alegre, Brazil

2009

● **Statics Applied to Ecology and Conservation Biology**

Federal University of Pelotas

📍 Pelotas, Brazil

2008

● **Sampling and Analysis Techniques in Bird Ecology**

Lagoa do Peixe National Park / ICMBio

📍 Mostardas, Brazil

2008

● **Sampling and Analysis Techniques in Animal Ecology**

Catholic University of Pelotas

📍 Pelotas, Brazil

- 2007 • **Biodiversity Management and Conservation**  
NGO Interação de Trabalhos Ambientais 📍 Caçapava do Sul, Brazil

## 👥 ACADEMIC ADVISORY

- 2023 • **Talita Menger Ribeiro**  
Dissertation - PhD Degree in Ecology, University of Evora. (Advisor Doctoral Sandwich Program -CNPq).  
📍 Evora, Portugal
- 2022 | 2023 • **Bibiana Terra Dasoler de Oliveira**  
Dissertation - PhD Degree in Ecology, University of Evora. (Co-advisor Doctoral Sandwich Program -CAPES).  
📍 Evora, Portugal
- 2018 • **Bruna de Castro Knopp**  
Thesis - Master's Degree in Animal Biology, Federal University of Pelotas. (Co-advisor). Relationship Between Wetland Area and Taxonomic, Functional and Phylogenetic Diversity of Birds in Southern Brazil.  
📍 Pelotas, Brazil
- 2014 • **Timóteo Matthias Rico**  
Monograph - Specialization in Conservation Biology, Catholic University of Pelotas, Brazil. Data Mining Applied to Conservation Biology: A case study on the extinction risk of mammals from Rio Grande do Sul  
📍 Pelotas, Brazil
- 2012 • **Diogo Maia Gräbin**  
Monograph – Bachelor's Degree in Biology, Federal University of Rio Grande do Sul, Brazil. Density and Spatial Distribution of Rhea americana in Different Physiognomies of the Pantanal of Nhecolândia  
📍 Porto Alegre, Brazil

## 👤 INVITED TALKS

- 2023 • **Climate change: Re-shuffling Darwin's Tangled Bank**  
Pedagogical and Technological University of Colombia  
📍 Tunja, Colombia
- 2022 • **Climate change: Re-shuffling the Tangled Bank**  
Institute of Geography and Spatial Planning - University of Lisbon  
📍 Lisbon, Portugal
- 2022 • **Understanding the responses of mutualistic networks to climate change through the lens of evolutionary history**  
Norwegian Institute for Nature Research 📍 Torgarden, Norway
- 2020 • **Ecological networks**  
Department of Ecology – Federal University of Rio Grande do Sul  
📍 Porto Alegre, Brazil
- 2020 • **Trait redundancy and the Structure and Stability of Mutualistic Networks: An Evolutionary approach**  
Emílio Goeldi Museum 📍 Belém do Para, Brazil



- 2020 ● **Climate Change: Re-shuffling the tangled bank**  
Department of Biology. Federal Institute Farroupilha  
📍 Santa Maria, Brazil
- 2020 ● **Climate-driven phenological shifts and the future of mutualist networks**  
Graduate Program in Animal Biology – Federal University of Pelotas  
📍 Pelotas, Brazil
- 2020 ● **Climate-driven phenological shifts and the eco-evolutionary dynamics of mutualistic networks**  
Department of Animal Biology – Federal University of Rio Grande do Sul  
📍 Porto Alegre, Brazil
- 2018 ● **Trait redundancy and the Structure and Stability of Mutualistic Networks**  
University of Valencia  
📍 Valencia, Spain
- 2018 ● **Untangling the Tangled Bank: Phylogenetic- and Trait-based approaches in Network ecology**  
University of Lisbon  
📍 Lisbon, Portugal
- 2018 ● **Untangling the Tangled Bank: Phylogenetic- and Trait-based approaches in Network ecology**  
Higher Institute of Agronomy  
📍 Lisbon, Portugal
- 2017 ● **Merging phylogenetic- and trait-based approaches into Network Ecology**  
Swansea University  
📍 Swansea, Wales
- 2016 ● **Coextinction and robustness in mutualistic networks: eco-evolutionary dynamics and patterns**  
Department of Ecology – Federal University of Rio Grande do Sul  
📍 Porto Alegre, Brazil
- 2016 ● **Coextinction and robustness in mutualistic networks: eco-evolutionary dynamics and patterns**  
Department of Ecology – University of Vale dos Sinos  
📍 São Leopoldo, Brazil
- **Untangling the tangled bank: a novel method for partitioning the effects of phylogenies and traits on ecological networks**  
University of São Paulo  
📍 São Paulo, Brazil
- 2015 ● **Coextinction and robustness in mutualistic networks**  
Department of Animal Biology – Federal University of Rio Grande do Sul  
📍 Porto Alegre, Brazil
- 2012 ● **Untangling the tangled bank: evolutionary and ecological components in interaction networks**  
I International Seminar of Ecological Research and Education  
📍 Pelotas, Brazil
- 2011 ● **Species detectability in mastozoology: Implications and analytical solutions**  
Econsciência Institute  
📍 Viamão, Brazil

- 2011 • **Considerations on the use of camera traps in conservation biology**  
Federal University of Rio Grande do Sul/ Curicaca Institute  
📍 Porto Alegre, Brazil
- 2010 • **Independent and shared effects of area and habitat driving avian community structure in the São Gonçalo Channel**  
Catholic University of Pelotas  
📍 Pelotas, Brazil



## GRANTS, AWARDS AND FUNDING

- 2011 | 2015 • **Coordination of Superior Level Staff Improvement**  
Doctoral fellowship (R\$105,600)  
📍 Porto Alegre, Brazil
- 2014 • **International Association for Vegetation Science**  
Travel Grant (€1,700)  
📍 Perth, Australia
- 2009 | 2011 • **Coordination of Superior Level Staff Improvement**  
MSc fellowship (R\$36,000)  
📍 Porto Alegre, Brazil
- 2009 • **Helmut Sick Award**  
XVII Brazilian Congress of Ornithology



## MEMBER OF EDITORIAL BOARD

- 2023 | present • **Functional Ecology**  
Associate Editor



## REVIEWER

### • Journals

- Agriculture, Ecosystems and Environment
- Annals of the Brazilian Academy of Sciences
- Arthropod-Plant Interactions
- Biological Conservation
- Community Ecology
- Ecography
- Ecology Letters
- Evolutionary Ecology
- Forest Ecology and Management
- Frontiers in Ecology and Evolution
- Iheringia - Série Botânica
- Iheringia – Série Zoologia
- Journal of Animal Ecology
- Journal of Biogeography
- Methods in Ecology and Evolution
- Oikos
- Perspectives in Ecology and Conservation
- Perspectives in Plant Ecology Evolution and Systematics
- Plos Biology
- Proceedings of the National Academy of Sciences
- Scientific Reports
- The Science of Nature

### • Books

- 2020 ● **Ecologia I: Explorando as inter-relações da vida sob a ótica evolutiva.**  
In: Ensino de Biologia: uma perspectiva evolutiva - Volume I: Biodiversidade & Evolução.
- 2020 ● **Ecologia II: Impactos antrópicos e efeitos eco-evolutivos sobre a biodiversidade.**  
In: Ensino de Biologia: uma perspectiva evolutiva - Volume II: Biodiversidade & Evolução.
- 2013 ● **As interações planta - polinizador e a estrutura de comunidades.**  
In: Ecologia de Interações Planta-Polinizador.



## OUTREACH

- 2021  
|  
present ● **Blog Geekcologist**  
Maintainer, Writer
- 2022 ● **Transport Ecology**  
Invited Writer
- 2021 ● **R-Bloggers**  
Invited Writer
- 2019 ● **Blog Methods In Ecology and Evolution**  
Invited Writer
- 2013  
|  
2019 ● **Blog Biodiverse Perspectives**  
Co-founder, Writer and International Communications and Outreach Chairman



## CONFERENCE ORGANIZATION

- 2023 ● **The Alfred Wallace Seminar Series**  
📍 Evora, Portugal
- 2023 ● **Science Festival '23 / School of Science and Technology Day**  
📍 Evora, Portugal
- 2016 ● **1st Biennial Meeting of the Brazilian Association of Ecological Science and Conservation / 5th Symposium on Theoretical Ecology**  
📍 Gramado, Brazil