

Pedro Henrique P. Braga

ph.pereirabraga@gmail.com

contact

Office SP 301.11,
Department of Biology,
Concordia University

email

ph.pereirabraga [at]
gmail.com

website

pedrohbraga.github.io

twitter

pedroh_p_braga

github

pedrohbraga

orcid

0000-0002-1308-1562

google scholar

ISSe8H0AAAAJ

languages

excellent written and
oral proficiency:
English, French,
Portuguese; **studied:**
Japanese, German

defining attributes

cooperative skills,
proactive and
resourceful team
participation,
adaptive management
and organisational skills,
public speaking and
communication,
cheerful 🌻

Interests

As an **evolutionary ecologist** and a **biogeographer**, I am interested in using information on the **evolutionary history of species** and their **ecological attributes** to understand general **processes and mechanisms that generate biodiversity patterns**. In my research, I stress the importance of **phylogenetic and spatial scales and historical components of ecological and evolutionary drivers**. I practice and promote **open and reproducible science**. I am also dedicated towards the integration of evidence-based **active learning strategies** in my **teaching** and **scientific communication** abilities.

Skillset

Data Analysis

I have a very strong foundation in R, where I concentrate most of my work. I have limited experience using Julia, SQL and MatLab.

Reproducibility

I create reports using RMarkdown, markdown, Sweave, RShiny, and LaTeX. I collaborate and perform version control using Git.

Front-End and Back-End

I am comfortable with using UNIX/Linux shell, and have limited experience with HTML and CSS.

Spatial Data Operations

I frequently perform spatial data operations using simple features and other R implementations (sf, sp, raster, rgeos, and others). I also have formal training and experience in using ArcGIS, QGIS, GDAL, GEOS and PROJ.

Statistical Foundation

I have a skilled basis in statistical and quantitative methods. I frequently apply univariate and multivariate statistics (including, generalized linear (mixed) models, generalized additive models, Eigenanalysis-based models, autoregressive and filtering models), Bayesian inference (BAMM), and extend them to simulations, species distribution models, and spatial and phylogenetic comparative methods (under parallel computing, if necessary).

Field and Laboratory

I have four years of field and laboratory experience in bioacoustics, zoology, sampling techniques, and identification of bats and frogs.

Education

Ph.D. Student in Biology, 2014 to *Current*

Concordia University, Montréal, CA

Thesis: *Spatial and phylogenetic scale-dependence in the evolutionary and ecological determinants of diversity patterns in bats*

Supervisors: Pedro **Peres-Neto** & Steven **Kembel**

M.Sc. in Ecology and Evolution, 2012 to 2014

Federal University of Goiás, Goiânia, BR

Thesis: *Niche evolution and diversification patterns in Neotropical anurans*

Supervisors: Natan Medeiros **Maciel** & Paulo **De Marco**

B.Sc. in Biological Sciences, 2008 to 2012

Federal University of Goiás, Goiânia, BR

Honours Thesis: *Adaptive climatic niche evolution in bufonid frogs*

Supervisors: Natan Medeiros **Maciel** & Paulo **De Marco**

Teaching Experience

Winter-Fall 2019	Pedagogical Formation Supporting Active Learning and Technological Innovation in Studies of Education (SALTISE)	Dawson College Concordia University
Winter 2019	Workshop Instructor Advanced Multivariate Analyses	Concordia University
Fall 2018	Teaching Assistant Biostatistics (BIOL322)	Concordia University
Fall 2018	Workshop Instructor QCBS R Workshop Series ggplot & plyr Programming in R	Concordia University
Summer 2018	Teaching Assistant Fundamentals of Nutrition (BIOL203)	Concordia University
Winter 2018	Teaching Assistant (Remote Setting) Fundamentals of Nutrition (eBIOL203)	Concordia University
Winter 2018	Workshop Instructor QCBS R Workshop Series Generalized Linear Mixed Models Multivariate Analyses	Concordia University McGill University
Fall 2017	Workshop Instructor QCBS R Workshop Series Introduction to ggplot2 & dplyr Linear Models in R	Concordia University McGill University
Winter 2017	Workshop Instructor QCBS R Workshop Series Generalized Linear Mixed Models Multivariate Analyses	McGill University
Fall 2016	Teaching Assistant Séminaire en écologie et analyse des données (BIO3500)	Université du Québec à Montréal
Fall 2016	Workshop Instructor QCBS R Workshop Series Introduction to R Charger et manipuler des données en R Loading and manipulating data in R Introduction to ggplot Linear models Programming in R	McGill University
Winter 2016	Workshop Instructor QCBS R Workshop Series Linear mixed models Advanced multivariate analyses Programming in R	McGill University
Winter 2013	Teaching Assistant Biostatistics	Federal University of Goiás

Mentoring

2016-2017	Wayne Toh Peer-mentoring under the Biology Graduate-Undergraduate Mentorship Program	Concordia University
2013	Larissa Pereira Lemes Co-supervision with Dr. Natan Medeiros Maciel on her honour thesis: <i>Effectiveness and priority areas for anuran conservation in Brazil</i>	Federal University of Goiás

Professional Activities

2017-Current	Coordinator for the QCBS R Workshop Series Québec Centre for Biodiversity Science	Montréal, Canada
2013-2014	Statistical Consultant Biostatistical consulting on research projects varying from clinical study designs to ecological research	Remote
2011-2012	Environmental Fieldwork Assessment (Chiroptera and Anura) and Statistical Consultant Environmental Assessment for Cosan Limited S.A. Sugar Cane Industries	Montividiu and Paraúna, Brazil
2011-2012	Research Technician Biodiversity monitoring of the areas that are directly influenced by Anglo American Brazil's activities as part of the agreement with the Federal University of Goiás	Barro Alto and Niquelândia, Brazil

Contributed Presentations

2019 Québec Centre for Biodiversity Science Symposium	Oral Presentation
Braga, Pedro Henrique P., Kembel, S., Peres-Neto, P., Historical contingencies, scale-dependence and contemporary- and past-climate determine the evolutionary global reassembly of bat communities. <i>2019 Québec Centre for Biodiversity Science Symposium.</i> (2019). Montréal, Canada.	
9th Biennial Conference for the International Biogeography Society	Oral Presentation
Braga, Pedro Henrique P., Kembel, S., Peres-Neto, P., Historical contingencies, scale-dependence and contemporary- and past-environmental variation determine the phylogenetic structure of bat assemblages across the globe. <i>9th Biennial Conference for the International Biogeography Society.</i> (2019). Málaga, Spain.	
9th Biennial Conference for the International Biogeography Society	Oral Presentation
Donelle, L., Braga, Pedro Henrique P., Vázquez-Rivera, H., Mestre, A., Arranz, I., Peres-Neto, P., Fournier, B., The frequency of environmental conditions mediates the coexistence of generalist and specialist species - a theoretical model and test on terrestrial vertebrates. <i>9th Biennial Conference for the International Biogeography Society.</i> (2019). Málaga, Spain.	
Climate Change Meeting for the International Biogeography Society	Oral Presentation

Braga, Pedro Henrique P., Predicting how climate driven species range shifts are affected by international borders: is it just another brick in the wall?. *Climate Change Meeting for the International Biogeography Society*. (2018). Évora, Portugal.

Climate Change Meeting for the International Biogeography Society Oral Presentation

Fournier, B., Vázquez-Rivera, H., Clappe, S., Donelle, L., **Braga, Pedro Henrique P.**, Peres-Neto, P., The spatial frequency of global climatic conditions drives the functional composition of Angiosperm communities. *Climate Change Meeting for the International Biogeography Society*. (2018). Évora, Portugal.

8th Biennial Conference for the International Biogeography Society Oral Presentation

Braga, Pedro Henrique P., Kembel, S., Peres-Neto, P., Niche evolution patterns across spatial scales in bats. *8th Biennial Conference for the International Biogeography Society*. (2017). Tucson, USA.

49th Meeting of the Association for Tropical Biology and Conservation Oral Presentation

Peixoto, F.P., **Braga, Pedro Henrique P.**, Brito, D., Diniz-Filho, J.A.F., Global patterns of phylogenetic turnover in bats. *49th Meeting of the Association for Tropical Biology and Conservation*. (2012). Bonito, Brazil.

I International Symposium of Ecology Oral Presentation

Alves, D.M.C.C., Peixoto, F.P., **Braga, Pedro Henrique P.**, Brito, D., Bats susceptible to an invasive disease: a macroecological approach. *I International Symposium of Ecology*. (2011). São Carlos, Brazil.

IX Latin-American Congress of Herpetology Oral Presentation

Braga, Pedro Henrique P., De Marco Junior, P., Maciel, N.M., Conservation of the ecological niche of the species of the *Rhinella marina* group (Anura: Bufonidae). *IX Latin-American Congress of Herpetology*. (2011). Curitiba, Brazil.

Outreach

2019 3MT Competition Finalist at Concordia University Oral Presentation

Braga, Pedro Henrique P., Is it another brick in the wall?. *2019 3MT Competition Finalist at Concordia University*. (2019). Montréal, Canada.

2019 Creative Reactions | Réactions Creatives Interdisciplinary Art Exhibition

Winkler, R. and **Braga, Pedro Henrique P.**, Scientist-artist pairing to develop and exhibit a project performed on the theme "Uncovering diversity patterns of bats across the globe". *2019 Creative Reactions | Réactions Creatives*. (2019). Montréal, Canada.

2018 Pint of Science Oral Presentation

Braga, Pedro Henrique P., Uncovering diversity patterns of bats across the globe. *2018 Pint of Science*. (2018). Montréal, Canada.

Peer-reviewed Publications

Fournier, B., Vázquez-Rivera, H., Clappe, S., Donelle, L., **Braga, Pedro Henrique P.**, & Peres-

Neto, P. R. (2020). The spatial frequency of climatic conditions affects niche composition and functional diversity of species assemblages: The case of angiosperms. *Ecology Letters*, 23(2), 254–264. <http://doi.org/10.1111/ele.13425>

Peixoto, F. P., Braga, Pedro Henrique P., & Mendes, P. (2018). A synthesis of ecological and evolutionary determinants of bat diversity across spatial scales. *BMC Ecology*, 18(1), 18. <http://doi.org/10.1186/s12898-018-0174-z>

Peixoto, F. P., Braga, Pedro Henrique P., Cianciaruso, M. V., Diniz-Filho, J. A. F., & Brito, D. (2014). Global patterns of phylogenetic beta diversity components in bats. *Journal of Biogeography*, 41(4), 762–772. <http://doi.org/10.1111/jbi.12241>

Batista, V. G., Gambale, P., Oda, F. H., & Braga, Pedro Henrique P. (2013). *Dendropsophus rubicundulus* (Lagoa Santa Treefrog). Predation. *Herpetological Review*, 45(1), 111.

Maciel, N. M., Carvalho Kokubum, M. N. de, Braga, Pedro Henrique P., Queiróz-Júnior, A. T. de, & Matsushita, R. H. (2013). Distribution extension, new state record and geographic distribution map of *Ceratophrys joazeirensis* Mercadal, 1986 (Anura: Ceratophryidae). *Herpetology Notes*, 6, 447–450.

Awards, Grants and Scholarships

2020	Bursary: Natural Sciences and Engineering Research Council (NSERC) Discovery Grant	CAD 5,000
2020	Bursary: Natural Sciences and Engineering Research Council (NSERC) Discovery Grant	CAD 5,000
2019	Award: Excellence Award from the Québec Centre for Biodiversity Science (QCBS)	CAD 1,279
2014-2018	Scholarship: Science without Borders Ph.D. Scholarship from the National Council of Research and Development (CNPq) (249289/2013-0)	CAD 180,000
2018	Award: Learning and Development Award (LeaDA) from the Québec Centre for Biodiversity Science (QCBS)	CAD 1,825
2018	Award: Excellence Award from the Québec Centre for Biodiversity Science (QCBS)	CAD 1,140
2017	Award: Learning and Development Award (LeaDA) from the Québec Centre for Biodiversity Science (QCBS)	CAD 250
2017	Award: Learning and Development Award (LeaDA) from the Québec Centre for Biodiversity Science (QCBS)	CAD 963
2015	Award: Non-tuition fees funding for the Intensive Course in Biodiversity Science from the Québec Centre for Biodiversity Science (QCBS)	CAD 1380
2015	Grant: Deutscher Akademischer Austauschdienst (DAAD) travel grant for the 2015 iDiv Summer School on Biodiversity Synthesis	EUR 1,450

2012-2014	Scholarship: M.Sc. Scholarship from the Coordination for the Improvement of Higher Education Personnel (CAPES)	BRL 28,800
2011-2012	Scholarship: National Council of Research and Development (CNPq) Undergraduate Research Scholarship	BRL 3,000

Memberships

2016- <i>Current</i>	International Biogeography Society, Student Member
2015-2019	Québec Centre for Biodiversity Science, Student Representative
2017-2017	Ecology Society of America, Student Member
2011-2012	Brazilian Herpetology Society, Student Member

Reviewed manuscripts for

2019	Diversity and Distributions
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