Curriculum Vitae
João Pedro Fontenelle de Araújo Freire da Silva

Institute of Forestry and Conversation, University of Toronto
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Education

2015 – 2020. PhD University of Toronto Scarborough (Environmental Sciences). Dissertation: The Influence of Environment, Landscape and Paleogeography on the Evolution and Diversification of Two Neotropical Fish Groups. Supervisor: Nathan R. Lovejoy

2011 – 2013. MSc Universidade de São Paulo (Zoology) Thesis: Taxonomic revision of the *Potamotrygon scobina* Garman, 1913 (Chondrichthyes: Myliobatiformes: Potamotrygonidae) complex, with biogeographical inferences. Supervisor: Marcelo R. de Carvalho

2006 – 2010. Licentiate in Education in Sciences. Universidade de São Paulo (Education)

2006 – 2010. BSc Universidade de São Paulo (Biology) Research work: Morphologic study of the encephalon and cranial nerves of representatives from the family Potamotrygonidae (Chondrichthyes: Myliobatiformes): taxonomic and phylogenetic implications. Supervisor: Marcelo R. de Carvalho

Professional Positions

2020 - Post-Doctoral Fellow, Institute of Forestry and Conservation, University of Toronto.

Publications

Published Papers

9. Fontenelle, J. P., Lovejoy, N. R, Kolmann, M. A., Marques, F. P. L. 2021. Molecular phylogeny for the Neotropical Freshwater Stingrays (Myliobatiformes: Potamotrygoninae) reveals limitations fo traditional taxonomy. *The Biological Journal of the Linnean Society.* https://doi.org/10.1093/biolinnean/blab090

8. Albert, J. S., Bernt, M. J., Fronk, A. H., **Fontenelle, J. P.,** Kuznar, S. L., Lovejoy, N. R. 2021. Neogene megariver captures and the Great Amazonian Biotic Interchange. *Global Planetary Change.* https://doi.org/10.1016/j.gloplacha.2021.103554

7. Fontenelle, J. P., Marques, F. P. L., Kolmann, M. A., Lovejoy, N. R. 2021. Biogeography of the Neotropical freshwater stingrays (Myliobatiformes: Potamotrygoninae) reveals the effects of continent-scale paleogeography and drainage evolution. *Journal of Biogeography.* https://doi.org/10.1111/jbi.14086

6. Hauser, F. E., **Fontenelle, J. P.**, Elbassiouny, A. A., Mandrak, N. E. and Lovejoy, N. R. 2019. Genetic structure of endangered lake chubsucker *Erimyzon sucetta* in Canada reveals a differentiated population in a precarious habitat. *Journal of Fish Biology*.

doi:10.1111/jfb.14155

5. Calegari, B. B., **Fontenelle, J. P**. 2018. Geographic distribution maps tutorial. Part II – Hypsometric Map. *Boletim da Sociedade Brasileira de Ictiologia No 124. P. 14 – 34*.

4. Fontenelle, J. P., Loboda, T. S., Kolmann, M., Carvalho, M. R. 2017. Angular cartilage variation and structure among Neotropical freshwater stingrays (Chondrichthyes: Myliobatiformes: Potamotrygonidae), with comments on function and evolution. – *Zoological Journal of the Linnean Society. P. 1 – 22.*

3. Fontenelle, J. P., Carvalho, M. R. 2017. Systematic revision of the *Potamotrygon scobina* Garman, 1913 species-complex (Chondrichthyes: Myliobatiformes: Potamotrygonidae), with the description of three new freshwater stingray species from Brazil and comments on their distribution and biogeography. – *Zootaxa 4310 (1) P. 1 - 63.*

2. Fontenelle, J. P., Carvalho, M. R. 2016. Systematic implications of brain morphology in Potamotrygonidae (Chondrichthyes: Myliobatiformes). *Journal of Morphology 277 (2) P. 252 – 263.*

1. Fontenelle, J. P., Silva, J. P. C. B., Carvalho, M. R. 2014. *Potamotrygon limai*, sp. nov. a new species of freshwater stingray from the upper Madeira River system, Amazon basin (Chondrichthyes: Myliobatiformes: Potamotrygonidae). *Zootaxa (3), P. 249 - 268.*

Manuscripts in Final Stages of Preparation for Publication

Frable, B, W., Melo, B. F., **Fontenelle, J. P.**, Oliveira, C., Sidlauskas, B. L. Ancient origins and recent diversification in the highly migratory Neotropical fish family Prochilodontidae(Teleostei:Characiformes). *In preparation for Zoologica Scripta*.

Manuscripts in Preparation

Fontenelle, J. P., Crampton, W., Lovejoy, N. R. Does water color matter? Phylogeny, biogeography and population structure in the Neotropical electric fish genus *Steatogenys* (Gymnotiformes: Hypopomidae). *In preparation for Molecular Ecology.*

Fontenelle, J. P., Marques, F. P. L, Lujan, N. K., Lovejoy, N. R. Phylogenomics of the Neotropical freshwater stingrays reveal Incomplete Lineage Sorting and ecological adaptation to Amazon basin rivers. *In preparation for Systematic Biology.*

Fontenelle, J. P., Calegari, B. B. Geographic distribution maps tutorial. Part III – Georeferenced distances calculations using river topology data. *In preparation for Boletim da Sociedade Brasileira de Ictiologia*.

Perez, T. J. M., **Fontenelle, J. P.**, Lovejoy, N. R. DNA Barcoding Reveals Cryptic Diversity and Presence of Invasive Species in a Conservation Area in Costa Rica. *In preparation for Journal of Fish Biology.*

Published Book Chapters

Fontenelle, J.P. et al., *five* book chapters as first author and *six* as middle author published in the book "*XV. Rayas de Agua Dulce (Potamotrygonidae) de Suramérica. Parte II. Colombia, Brasil, Perú, Bolívia, Paraguay, Uruguay y Argentina. 1 ed., 2017*" regarding the taxonomy, distribution and biology of Neotropical stingrays. These chapters were written in collaboration with Castello, H., Lasso, C. A., Loboda, T., Silva, J. P. C. B., Carvalho, M. R., Rosa, R. S., And Araujo, M. L. G.

Fontenelle, J.P et al. *one* book chapter as first author and *ten* as middle author published in the book " *IX. Rayas de Agua Dulce (Potamotrygonidae) de Suramérica. Parte I. Colombia, Venezuela, Ecuador, Perú, Brasil, Guyana, Surinam y Guayana Francesa: diversidad, bioecología, uso y conservación. 1ed, 2014*", regarding the taxonomy, distribution and biology of species belonging to the Neotropical stingrays group. These chapters were written in collaboration with Sanchez-Duarte, P., Lasso, C. A., Acosta-Santos, A., Morales-Betancourt, M. A., Agudelo-Cordoba, E., Bonilla-Castillo, C. A., Gomez-Hurtado, G. A., Guzman, A., Ortiz-Arroyave, L. M., Loboda, T., Rosa, R. S., Silva, J. P. C. B., Carvalho, M. R., Barriga, R., and Ortega, H.

Press

Journal of Biogeography – Featured Early Career Researcher (ERC). 2021. https://journalofbiogeographynews.org/2021/06/28/ecr-feature-joao-pedro-jp-fontanelle-on-stingrays-biogeography/

The New Scientist - "Stingrays in the Amazon were stranded there by the Caribbean Sea". 2021. https://www.newscientist.com/article/2273362-stingrays-in-the-amazon-were-stranded-there-by-the-caribbean-sea/

Invited Conference Presentations

2021. **Fontenelle, J. P.** Polymorphic, cryptic or hybridizing species? The importance of phenotype in interpreting molecular patterns in a fast evolving, taxonomically complicated group of Neotropical stingrays. In: "Phenotype still matters in the genomic era" symposium. II Virtual Meeting of Systematics, Biogeography, and Evolution.

Conference Presentations

Fontenelle, J. P., Marques, F. L. P., Lujan, N., Lovejoy, N. R. 2021. Evolution And Diversity In The Neotropical Freshwater Stingrays: A Phylogenomic Perspective. In: 2021 Joint Meeting of Ichthyology and Herpetology. Phoenix, AZ. USA.

Perez, T. P., **Fontenelle, J. P.,** Angulo, A., Lovejoy, N. R. 2021. Integrative Taxonomy As A Tool for Conservation: Exploring Freshwater Fish Diversity of the Barra del Colorado Wildlife Refuge, Costa Rica. In: 2021 Joint Meeting of Ichthyology and Herpetology. Phoenix, AZ. USA.

de Brito, V., Betancur-R, R., Burns, M. D., Buser, T. J., Conway, K., **Fontenelle, J. P.**, Kolmann, M. A., McCraney, W. T., Thacker, J. P., Bloom, D.D. 2021. (A Lack of) Patterns of Phenotypic Evolution Associated with Marine/Freshwater Transitions in Fishes. In: 2021

Joint Meeting of Ichthyology and Herpetology. Phoenix, AZ. USA.

Fontenelle, J. P., Kolmann, M., Marques, F. L. P.,Lovejoy, N. R. 2019. Matryoshka fishes? Assessing South American continental-scale biogeography using the widespread Neotropical freshwater stingrays (Myliobatiformes: Potamotrygoninae). In: 2019 Joint Meeting of Ichthyology and Herpetology. Snowbird, UT. USA. ***Best Paper in General Ichthyology Finalist.**

Fontenelle, J. P., Kolmann, M., Marques, F. L. P.,Lovejoy, N. R. 2019. Another Kettle of Fish: Molecular Phylogeny of the Neotropical Freshwater Stingrays Reveals Recent Diversification adn Geographically Determined Lineages. In: Evolution 2019. Providence, RI. USA

Soares, B. E., **Fontenelle, J. P.** 2019. A diversidade e evolução do tamanho corporal nos peixes elétricos neotropicais (Ostariophysi: Gymnotiformes). In: Encontro Brasileiro de Ictiologia. 2019. Belém, Brazil.

Fontenelle, J. P., Crampton, W., Lovejoy, N. R. 2018. Master of one or none? Phylogeny and population structure in the Neotropical electric fish genus *Steatogenys* (Gymnotiformes: Hypopomidae) across different water types. In: 2018 Joint Meeting of Ichthyology and Herpetology. Rochester, NY. USA.

Fontenelle, J. P., Crampton, W., Lovejoy, N. R. 2017. Does water colour matter? Phylogeny and phylogeography of the genus *Steatogenys* (Boulenger, 1898) (Gymnotiformes: Hypopomidae). In: In: II International Symposium on Phylogeny and Classification of Neotropical Fishes, 2017, Londrina/PR, Brazil.

Fontenelle, J. P., Marques, F. L. P., Kolmann, M, Lovejoy, N. R. 2017. Molecular phylogeny of the Neotropical freshwater stingrays (Chondrichthyes: Myliobatiformes: Potamotrygonidae), with biogeographical inferences. In: II International Symposium on Phylogeny and Classification of Neotropical Fishes, 2017, Londrina/PR, Brazil. ***Best Oral Presentation Award.**

Fontenelle, J. P., Marques, F. L. P., Kolmann, M, Lovejoy, N. R. 2017. Molecular phylogeny of the Neotropical freshwater stingrays (Chondrichthyes: Myliobatiformes: Potamotrygonidae), with biogeographical inferences. In: 2017 Joint Meeting of Ichthyology and Herpetology. Austin, TX. ***Best Student Paper Award.**

Fontenelle, J. P., Crampton, W., Lovejoy, N. R. 2016. Does water colour matter? Phylogeny and phylogeography of the genus *Steatogenys* (Boulenger, 1898) (Gymnotiformes: Hypopomidae). 2016. Ontario Ecology, Ethology and Evolution Colloquium. Toronto, ON. Canada

Fontenelle, J. P., Crampton, W., Lovejoy, N. R. 2016. Does water colour matter? Phylogeny and phylogeography of the genus *Steatogenys* (Boulenger, 1898) (Gymnotiformes: Hypopomidae). In: 2016 Joint Meeting of Ichthyology and Herpetology. New Orleans, LA.

Fontenelle, J.P., Carvalho, M. R. 2015. Brain Morphology in the Family Potamotrygonidae, with Observations on the Evolution of the Brain in the Order Myliobatiformes. In: 2015 Joint Meeting of Ichthyology and Herpetology. Reno, NV.

Fontenelle, J.P., Loboda, T., Carvalho, M. R. 2014. Angular cartilage variation and structure among Neotropical freshwater stingrays (Chondrichthyes: Myliobatiformes: Potamotrygonidae). In: 2014 Joint Meeting of Ichthyology and Herpetology. Chattanooga, TN.

Fontenelle, J.P., Carvalho, M. R. 2014. Morphological variation and distribution of the *Potamotrygon scobina* species complex in the Amazon basin (Chondrichthyes: Potamotrygonidae). In: 2014 Joint Meeting of Ichthyology and Herpetology. Chattanooga, TN.

Carvalho, M. R., Soares, M., Laurini, C., Silva, J. P. C. B., Vaz, D., Figueiredo, S., Loboda, T., **Fontenelle, J.P.**, Ragno, M., Petean, F., Shibuya, A., Yokota, L., Carvalho, M., Soares, W., Casas, A., Moreira, R., Gomes, U. 2013. Morphology and shark non-monophyly, or Why Homology Still Matters in Systematics. In: ASIH Fishes & Morphology Symposium I, 2013, Albuquerque/NM. ASIH Fishes & Morphology Symposium I, 2013.

Carvalho, M. R., Soares, M. C., Laurini, C. R., Silva, J. P. C. B., Vaz, D. B., Viana, S. T. F., Loboda, T., **Fontenelle, J.P.,** Ragno, M. P., Petean, F. F., Shibuya, A., Yokota, L., Carvalho, M., Minelli, J. B., Soares, W., Casas, A., Moreira, R., Gomes, U. L. 2013. Phylogenetic relationships among major groups of living elasmobranchs: a morphological perspective. In: 9th Indo-Pacific Fish Conference, 2013, Okinawa. 9th Indo-Pacific Fish Conference, 2013.

Carvalho, M. R., Silva, J. P. C. B., Loboda, T., **Fontenelle, J.P.,** Ragno, M. P., Soares, M. C., Laurini, C. R., Shibuya, A., Araujo, M. L. G., Marques, F. P. L. 2013. Systematics and evolution of the highly diverse and morphologically complex Neotropical freshwater stingrays (Chondrichthyes: Potamotrygonidae). In: 9th Indo-Pacific Fish Conference, 2013, Okinawa. 9th Indo-Pacific Fish Conference, 2013.

Research Grants and Awards

- 2019. Graduate Student Research Award. University of Toronto Scarborough. Canada. (CAD $1,000)
- 2019. Edward C. Raney Fund Award. American Society of Ichthyology and Herpetology. USA. (USD $1,000)
- 2017, 2016. T-Holder's Academic Excellence Award. University of Toronto.
- 2017. Best Student Oral Presentation – 3rd Place. II International Symposium on Phylogeny and Classification of Neotropical Fishes.
- 2017. Best Student Paper. Neotropical Ichthyology Association (NIA).
- 2015 – 2019. International Full PhD research scholarship. Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq). Brazil. (CAD $100,000)
- 2013. "Bolsa de Estágio em Pesquisa no Exterior - BEPE" (international practicum in research). Fundação de Apoio à Pesquisa do Estado de São Paulo (FAPESP). Brazil. (USD $10,000)
- 2011 – 2013. Master in Science research scholarship. Fundação de Apoio à Pesquisa do Estado de São Paulo (FAPESP). Brazil. (BRL $45,000)
- 2011. Departmental Master in Science research scholarship. Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq). Brazil. (BRL $4,000)

- 2010. “Iniciação Científica” (undergraduate work research scholarship). Fundação de Apoio à Pesquisa do Estado de São Paulo (FAPESP). Brazil. (BRL $10.000)

Invited Lectures

- 2020. Biogeography and Evolution of the Neotropical Freshwater Stingrays: a Molecular Perspective. Universidade Estadual Paulista (UNESP). Brazil.
- 2019. Conservation Genetics. Part of the course Applied Conservation Biology (D54). University of Toronto Scarborough. Canada.
- 2018. Evolution and Development. Part of the course Evolutionary Biology (B51). University of Toronto Scarborough. Canada
- 2018. Developmental genes and Evolution. Part of the course Evolutionary Biology (B51). University of Toronto Scarborough. Canada.
- 2014. Biology of Venomous Fishes. Instituto Butantan. Brazil
- 2013. Accidents with sharks and rays. Universidade Metodista de São Paulo. Brazil.
- 2013. Biology of Venomous Fishes. Instituto Butantan. Brazil.
- 2012. Biology of Venomous Fishes. Instituto Butantan. Brazil.

Professional Experience

Peer-reviewed Journal Referee

- Neotropical Ichthyology, PlosOne, Journal of Fish Biology, Biological Journal of the Linnean Society

Editorial staff

- *Outreach Associate – Journal of Integrative Organismal Biology: A Journal of the Society for Integrative and Comparative Biology.*

Conservation assessments

- IUCN Red List of Threatened Species – Freshwater Biodiversity Unit

Teaching Experience

Teaching Assistant (TA):

- 2021. Ecology and Evolutionary Biology Laboratory. University of Toronto. Canada.
- 2021. Evolutionary Biology. University of Toronto. Canada
- 2020. Ecology and Evolutionary Biology Laboratory. University of Toronto. Canada.
- 2020. Evolutionary Biology. University of Toronto. Canada.
- 2020. Special Topics in Biodiversity and Systematics. University of Toronto. Canada.
- 2019. Ecology and Evolutionary Biology Laboratory. University of Toronto. Canada.
- 2019. Evolutionary Biology. University of Toronto. Canada.
- 2019. Tropical Biodiversity. University of Toronto. Canada.
- 2018. Community Ecology. University of Toronto. Canada.
- 2018. Evolutionary Biology. University of Toronto. Canada.
- 2018. Applied Conversation Biology. University of Toronto. Canada
- 2017. Ecology and Evolutionary Biology Laboratory. University of Toronto. Canada.
- 2017. Evolutionary Biology. University of Toronto. Canada.
- 2017. Tropical Biodiversity. University of Toronto. Canada.
- 2016. Community Ecology. University of Toronto. Canada.
- 2016. Evolutionary Biology. University of Toronto. Canada.
- 2016. Special Topics in Biodiversity and Systematics. University of Toronto. Canada.
- 2015. Ecology and Evolutionary Biology Laboratory. University of Toronto. Canada.
- 2012. Vertebrate Zoology. Instituto de Biociências. Universidade de São Paulo. Brazil.

Undergraduate Teaching Assistant

- 2009. Vertebrate Zoology. Instituto de Biociências. Universidade de São Paulo. Brazil.
- 2008. Vertebrate Zoology. Instituto de Biociências. Universidade de São Paulo. Brazil.

Mentoring

- 2017-Current. Undergraduate research. University of Toronto Scarborough. Canada
  - Taegan Perez (Undergraduate Honours Research Project)
  - Shalini Bahl (Undergraduate Honours Research Project)

Extracurricular Experience

- UTSC Biology Undergraduate Integrative Research Poster Day – Judge (2017-2020)
- UTSC Scinapse competition – Judge (2018 - 2020)
- Research Volunteer – University of Toronto Kinesiology Department (2015-2018)