

MARIA IZABEL CAVASSIM ALVES

Bioinformatician; focus in Population Genetics and Evolution

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EXPERIENCE

Postdoctoral Researcher

Dpt. of Ecology and Evolutionary Biology, UCLA

01/11/2020 Los Angeles, CA, USA

- The impact of dominance on the distribution of fitness effects.
- Supervisor: Kirk Lohmueller

Teaching Assistant

Science and Technology, Aarhus University

2016 - 2020 Aarhus, Denmark

- Next Generation Sequencing
- Tree of life 1 and 2 (developed material)
- Learning from Genome Data
- Genome Variation and Human Health
- Population genetics on genomes (developed material)

✈ Visiting PhD Student

deCODE genetics

09/2018 Reykjavik, Iceland

- Project: Development of *de novo* mutation variant calling pipeline using GraphTyper.
- Supervisor: Mikkel Schierup and Agnar Helgason

✈ Visiting Research Scholar

Dpt. of Biological Sciences, Columbia University

01 - 07/2019 New York, NY, USA

- Project: The evolution and co-evolution of PRDM9 directed recombination across vertebrates.
- Supervisor: Molly Przeworski

PROJECTS

The QCBio Collaboratory

UCLA

Since August 2021

Providing computational research support to projects initiated by experimentalists at UCLA while also training researchers in Bioinformatics, R and population genetics.

The stdpopsim Consortium

UCLA, University of Oregon, University of Arizona

Since November 2020

Contributing to the development of a standard library of population genetic models.

EDUCATION

PhD in Bioinformatics

Bioinformatics Research Centre, Aarhus University

07/2016 - 10/2020 Aarhus, Denmark

- In-depth experience with population genetics (applied to bacteria and vertebrates).
- Thesis title: Recombination and horizontal gene transfer through the lens of phylogenomics and comparative genomics
- Co-supervisors: Mikkel H. Schierup and Stig U. Andersen

Master's in Bioinformatics

Bioinformatics Research Centre, Aarhus University

08/2015 - 06/2018 Aarhus, Denmark

- Thesis title: Population genetics of *Rhizobium leguminosarum* bv. *trifolii*
- Supervisors: Mikkel Schierup and Stig U. Andersen

✈ Stay abroad (Undergrad)

Department of Computer Science, Royal Institute of Technology

01 - 07/2014 Stockholm, Sweden

- Courses: Bionanotechnology; Energy and Environment; Omic Data and System Biology; Algorithmic Bioinformatics

Bachelor in Agriculture Engineering

Escola Superior de Agricultura Luiz de Queiroz, University of São Paulo

2011 - 2015 São Paulo, Brazil

- Thesis title: Kinship coefficient calculation in a panel of 141 sugarcane genotypes using SNPs
- Supervisors: Antonio Augusto Franco Garcia

KEY SKILLS

Pop. Genetics Data Analysis Evolution
Bioinformatics Recombination Creative
Independent Social Hard-working

PUBLICATIONS

📄 Journal Articles and Preprints

- Cavassim, M. I. A., Andersen, S. U., Bataillon, T., & Schierup, M. H. (2021). Recombination Facilitates Adaptive Evolution in Rhizobial Soil Bacteria. *Molecular Biology and Evolution*.
- Cavassim, M. I. A., Baker, Z., Hoge, C., Schierup, M. H., Schumer, M., & Przeworski, M. (2021). Prdm9 losses in vertebrates are coupled to those of paralogs zcwpw1 and zcwpw2. *in press PNAS*.
- Young, J. P. W., Moeskjær, S., Afonin, A., Rahi, P., Maluk, M., James, E. K., ... Perry, B. J., et al. (2021). Defining the rhizobium leguminosarum species complex. *Genes*, 12(1), 111.
- Cavassim, M. I. A., Moeskjær, S., Moslemi, C., Fields, B., Bachmann, A., Vilhjálmsson, B. J., ... Andersen, S. U. (2020). Symbiosis genes show a unique pattern of introgression and selection within a rhizobium leguminosarum species complex. *Microbial genomics*, 6(4).
- Skov, L., Macià, M. C., Lucotte, E., Cavassim, M. I. A., Castellano, D., Mailund, T., ... Munch, K. (2018). Strong selective sweeps before 45,000 bp displaced archaic admixture across the human x chromosome. *bioRxiv*, 503995.

ACADEMIC EXPERIENCE

Topic Coordinator for Frontiers in Plant Science
02/2022

Peer Reviewer for Microbial Genomics
12/2021

Population Genetics Summer course
08/2018

📍 University of Copenhagen, Denmark
Analyses of genotyping and sequencing data in medical and population genetics

Statistical Genetics Summer Institute
07/2017

📍 Uni. of Washington, Seattle, USA
Association Mapping; Mixed Modules in Quantitative Genetics; GWAS and Sequencing Data; Integrative Genomics
Computational Genomics Summer Institute

07/2017
📍 UCLA, Los Angeles, CA, USA

SCHOLARSHIPS

🏆 **Scholarship (Undergrad)**
2014, University of São Paulo, Piracicaba, Brazil
Full 6 months scholarship based on academic performance to study abroad (Sweden).

🏆 **Tuition waiver and scholarship (Masters)**
2015, Aarhus University, Aarhus, Denmark
Full tuition waiver and scholarship to follow the Masters degree programme in Bioinformatics.

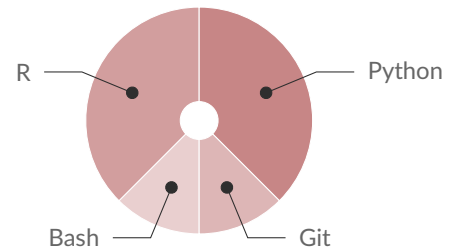
🏆 **Other scholarships (PhD)**
2017-2020, Aarhus University, Aarhus, Denmark

- 800 USD of financial support to participate at SMBE -2017 (Oti-con)
- 2970 USD of financial support to research abroad - 2019 (GSST)

PRESENTATIONS

- The genomic architecture of introgression among sibling species of *Rhizobium leguminosarum*, **European Nitrogen Fixation Conference, Stockholm, Sweden, 07/2018**
- The evolution and co-evolution of PRDM9 across vertebrates, **QCBio Research Seminar, UCLA, USA, 02/2021**

CODING EXPERIENCE



LANGUAGES

Portuguese ●●●●●●
English ●●●●●●
Spanish ●●●●●●
Danish ●●●●●●

VOLUNTEERING

Portuguese language café coordinator

KTH, Royal Institute of Technology
📅 2014 📍 Stockholm, Sweden

Genetics Dpt. student representative
University of São Paulo

📅 2014 📍 Piracicaba, Brazil

Youth Goodwill Ambassador of Denmark

Aarhus University
📅 2017 📍 Aarhus, Denmark

REFEREES

Prof. Mikkel Schierup
@ Aarhus University, Bioinformatics Research Centre
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Prof. Molly Przeworski
@ Columbia University, Dept of Biological Sciences
✉ mp3284@columbia.edu

Prof. Thomas Bataillon
@ Aarhus University, Bioinformatics Research Centre
✉ tbata@birc.au.dk