Rodrigo Rampazo Amadeu

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Education

2021 — PH.D. in Horticultural Sciences (Minor: Statistics), University of Florida, USA
Dissertation: "Statistical methods for genomic-assisted blueberry breeding"
Advisor Dr. Patricio Munoz, Blueberry Breeding & Genomics Lab

2018 — M.S. in Plant Genetics and Breeding, ESALQ, University of São Paulo, Brazil
Thesis: "Molecular pairwise relatedness in autopolyploids: a simulation study"
Advisor Dr. Antonio Augusto Franco Garcia, Statistical-Genetics Lab

2015 — B.ENG. in Agriculture (Minor: Biotechnology), ESALQ, University of São Paulo, Brazil

2015 — B.EDU. in Agricultural Sciences, ESALQ, University of São Paulo, Brazil

Experience

Nov 2021 to current — **Bayer Crop Science, USA**
Quantitative Genetics Scientist, Corn Product Design

May 2018 to Nov 2021 — **University of Florida, USA**
Graduate Research Assistant, Blueberry Breeding & Genomics Lab, Supervisor Dr. Patricio Munoz
- Planning and optimization of breeding program
- Genetic data analysis (genomic prediction, population genetics, gene discovery and mapping)
- Agricultural data analysis (experiment design and planning, linear mixed models)
- Development of statistical-genetics software: AGHmatrix, diaQTL, PedigreeSimR)
- Plant breeding activities (phenotyping, selection)

Jan 2016 to Mar 2018 — **University of São Paulo, Brazil**
Graduate Research Assistant, Statistical-Genetics Lab, Supervisor Dr. Augusto F. Garcia
- Genetic data analysis (genomic prediction, population genetics, gene discovery and mapping)
- Agricultural data analysis (experiment design and planning, linear mixed models)
- Development of statistical-genetics software: onemap, onemap2pop, and fullsibQTL)

Oct 2013 to Oct 2014 — **University of Florida, USA**
Intern, Forage Breeding and Genomics Lab, Supervisor Dr. Patricio Munoz
- Development of software to build genomic relationship matrices (AGHmatrix)
- Plant breeding activities (pollination, phenotyping, selection)

Jul 2010 to Dec 2015 — **University of São Paulo, Brazil**
Intern, Statistical-Genetics Lab, Supervisor Dr. Augusto F. Garcia
- Development of pipeline for SNP dosage calling in autopolyploid data
- Population structure analysis of sugarcane panel
- CNPq & Santander scholarships

Awards & Scholarships

2020 — Scholarship, Murial Rumsey scholarship, CALS, Univ. of Florida
2020 — Scholarship, outstanding teaching assistantship, Univ. of Florida
2019 — Scholarship, outstanding teaching assistantship, Univ. of Florida
2019 — Award, poster competition Plant Science Symposium, Univ. of Florida - 1st Place
2016 — Award, Prof Brieger, best graduating student of Dep. of Genetics, Univ. of São Paulo
2013 — Scholarship, Science without Borders - CAPES - 1yr tuition and living at Univ. of Florida
2012 — Scholarship, Scientific Initiation - PIBIC/CNPq
2011 — Scholarship, Scientific Initiation - Santander

Journal articles (17)

Google Scholar: 300+ citations, h-index 10

2021 **Amadeu, RR**; Munoz, R; Zheng, C; Endelman, JB. "QTL mapping in outbred tetraploid (and diploid) diallel populations". *Genetics*, 219 (iyab124), link

2021 Zheng, C; **Amadeu, RR**; Munoz, R; Endelman, JB. "Haplotype reconstruction in connected tetraploid F1 populations". *Genetics*, 219 (iyab106), link

2021 Ferrao, LFV; **Amadeu, RR**; Benevenuto, J; de Bem Oliveira, I; Munoz, R. "Genomic prediction in an outcrossing and autotetraploid fruit crop: lessons from blueberry breeding". *Front. Plant Sci.*, 12 (676326), link

2021 Quezada, M; **Amadeu, RR**; Vignale, B; Cabrera, D; Pritsch, C; Garcia, AAF. "Construction of a high-density genetic map of *Acca sellowiana* (Berg.) Burret, an outcrossing species, based on two connected mapping populations". *Front. Plant Sci.*, 12 (626811), link

2020 Cappai, F*; **Amadeu, RR*** (**contributed equally for this study*); Benevenuto, J; Cullen, R; Garcia, AL; Grossman, AY; Ferrão, LFV; Munoz, PR. "High-resolution linkage map and QTL analyses of fruit firmness in autotetraploid blueberry". *Front. Plant Sci.*, 11 (562171), link

2020 de Bem Oliveira, I; **Amadeu, RR**; Ferrão, LFV; Munoz, PR. "Optimizing whole-genomic prediction for autotetraploid blueberry breeding". *Heredity*, 125, link

2020 **Amadeu, RR**; Lara, LADC; Munoz, PR; Garcia, AAF. "Estimation of molecular pairwise relatedness in autopolyploid crops". *G3*, 10(12), link

2020 de Oliveira, AA; Resende, MFR; Ferrão, LFV; **Amadeu, RR**; Guimarães, LJM; Guimarães, CT; Pastina, MM; Margarido, GRA. "Genomic prediction applied to multiple traits and environments in second season maize hybrids". *Heredity*, 125, link

2020 **Amadeu, RR**; Ferrão, LFV; de Bem Oliveira, I; Benevenuto, J; Endelman, JB; Munoz, PR. "Impact of dominance effects on autotetraploid genomic prediction". *Crop Science*, 60(2), link

2019 Estrada-Reyes, ZM; Tsukahara, Y; **Amadeu, RR**; Goetsch, AL; Gipson, TA; Sahlu, T; Puchala, R; Wang, Z; Hart, ST; Mateescu, RG. "Signatures of selection for resistance to *Haemonchus contortus* in sheep and goats". *BMC Genomics*, 20(1), link

2019 Lara, LADC; Santos, MF; Jank, L; Chiari, L; Vilela, MDM; **Amadeu, RR**; dos Santos, JP; Pereira, GDS; Zeng, ZB; Garcia, AAF. "Genomic selection with allele dosage in *Panicum maximum* Jacq.". *G3*, 9(8) link

2019 Benevenuto, J; Ferrão, LFV; **Amadeu, RR**; Munoz, P. "How can a high-quality genome assembly help plant breeders?". *GigaScience*, 8(6), link

2019 de Bem Oliveira, I; Resende Jr, MFR; Ferrao, LFV; **Amadeu, RR**; Endelman, JB; Kirst, M; Coelho, ASG; Munoz, PR. "Genomic prediction of autotetraploids; influence of relationship matrices, allele Dosage, and continuous genotyping calls in phenotype prediction". *G3*, 9(4), link

2018 Conson, ARO*; Taniguti, CH*; **Amadeu, RR*** (**contributed equally for this study*); Andreotti, IAA; de Souza, LM; dos Santos, LHB; Rosa, JRBF; Mantello, CC; da Silva, CC; Scaloppi Jr, EJ; Ribeiro, RV; Le Guen, V; Garcia, AAF; Gonçalves, PS; Souza, AP. "High-resolution genetic map and QTL analysis of growth-related traits of *Hevea brasiliensis*". *Front. Plant Sci.*, 9(1255), link

2018 Ferreira, DA; Abreu, GF; Cheavegatti-Gianotto, A; Soldi, MCM; Carneiro, MS; **Amadeu, RR**; Hoffmann, HP; Aricetti, JA; Wolf, LD; Caldana, C. "Metabolite profiles of sugarcane culm reveal the relationship among metabolism and axillary bud outgrowth in genetically related sugarcane commercial cultivars". *Front. Plant Sci.*, 9(857), link

2018 Cellon, C; **Amadeu, RR**; Olmstead, JW; Mattia, MR; Ferrao, LFV; Munoz, PR. "Estimation of genetic parameters and prediction of breeding values in an autotetraploid blueberry breeding population with extensive pedigree data". *Euphytica*, 214(87), link

2016 **Amadeu, RR**; Cellon, C; Olmstead, JW; Garcia, AAF; Resende, MF; Munoz, PR. "AGHmatrix: R package to construct relationship matrices for autotetraploid and diploid species, a blueberry example". *The Plant Genome*, 9(3), link

Selected teaching and talks

2021	**Seminar** "QTL mapping in tetraploid diallel populations". CGDG. *The Roslin Institute*, UK.
2020	**Seminar** "QTL mapping in autotetraploid multi-parent populations". *The 6^{th} International Conference of Quantitative Genetics (ICQG6).* Virtual conference. link
Fall 2020	**Teaching assistant** of Field Plot Techniques, graduate level, University of Florida
Sum 2020	**Guest lecturer** of Special Topic in Genetics and Breeding, graduate level, University of São Paulo
Fall 2019	**Teaching assistant** of Mol. Marker Assisted Plant Breeding, graduate level, University of Florida
Fall 2019	**Teaching assistant** of Field Plot Techniques, graduate level, University of Florida
Fall 2018	**Teaching assistant** of Field Plot Techniques, graduate level, University of Florida
Spring 2015	**Teaching assistant** of Calculus I, undergraduate level, University of São Paulo
Spring 2012	**Teaching assistant** of Genetics, undergraduate level, University of São Paulo
2011-2015	**Instructor** of Precalculus in a college preparatory school, Piracicaba, Brazil

Ad-hoc reviewer

BMC Genomics (1), Briefings in Bioinformatics (3), Crop Science (1), Frontiers in Plant Science (2)

Software development

AGHmatrix	author, compute relationship matrices for diploid and autopolyploid species, link
onemap	contributor, build genetic maps in experimental crosses, link
onemap2pop	author, onemap extension to build multi-family genetic maps in outcrossing species, link
fullsibQTL	co-author, QTL mapping in outcrossing species using composite interval mapping, link
diaQTL	co-author, QTL mapping in multiparent and autopolyploid populations, link
MultiPolyPop	author, simulation of multiparent and autopolyploid populations, link
SimpleMating	author, simple mating allocation based on cullings for perennial breeding, link

Leadership

2010-2011	Student representative for the B.Edu. in Agr Sciences Committee, University of São Paulo
2011-2012	Student representative for the B.Eng. in Agriculture Committee, University of São Paulo
2010-2012	Student union member, University of São Paulo

Skills

genetics	genomic prediction, GWAS, QTL mapping, quantitative genetics, polyploid genetics, simulation
statistics	analysis of genetic & agricultural data, machine learning, linear mixed models
programming	R (advanced): package development, tidyverse, shiny/plotly app, parallelization
programming	shell/bash script, Linux, C/C++, ASReml, GitHub, AlphaGenes software, LaTeX
language	Portuguese (native), English (high proficiency)

Specialized Training

2021	Data-Driven Breeding and Genetics, Roslin Institute
2021	Fundamentals Deep Learning, Deep Learning Institute-NVIDIA, Gainesville, FL, US
2019	Analysis of Experiments Using ASReml-R, Dr. S. Gezan (UF), Gainesville, FL, US
2017	Modelling GxE Interaction in Genomic Prediction Analysis, Dr. J. Crossa (CIMMYT), Piracicaba
2016	Quantitative Genetics and Genomics Workshop, Drs. Morota & Spangler (UNL), Piracicaba, BR
2015	Brazilian Edition of the "Tucson Plant Breeding Institute", Org. Dr. Bruce Walsh, Piracicaba, BR
2015	EMBL-EBI Bioinformatics Workshop, EMBL-EBI, Piracicaba, BR