

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
- 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: 260+ CITATIONS, H-INDEX 9

- 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; Sahl, 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. <i>The Roslin Institute</i> , UK.
2020	Seminar "QTL mapping in autotetraploid multi-parent populations". <i>The 6th International Conference of Quantitative Genetics (ICQG6)</i> . 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 (1)

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
PedigreeSimR	author, simulation of multiparent and autopolyploid populations, link

Statistics consulting

2020	<i>RAPiD Genomics LLC</i> , optimization of molecular biology protocol with machine learning algorithm
2014-2016	<i>Daniel Reis Pereira</i> , agriculture big data wrangling & analysis, development of apps to guide decisions for risk in agriculture (multiple times for different Ag companies as Cargill, Geosys, BTG)
2015	<i>Instituto Terra Mater</i> , data wrangling and statistical analysis of vegetables prices 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