

# 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 - 1<sup>st</sup> 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	<b>Seminar</b> "QTL mapping in tetraploid diallel populations". CGDG. <i>The Roslin Institute</i> , UK.
2020	<b>Seminar</b> "QTL mapping in autotetraploid multi-parent populations". <i>The 6<sup>th</sup> International Conference of Quantitative Genetics (ICQG6)</i> . Virtual conference. <a href="#">link</a>
Fall 2020	<b>Teaching assistant</b> of Field Plot Techniques, graduate level, University of Florida
Sum 2020	<b>Guest lecturer</b> of Special Topic in Genetics and Breeding, graduate level, University of São Paulo
Fall 2019	<b>Teaching assistant</b> of Mol. Marker Assisted Plant Breeding, graduate level, University of Florida
Fall 2019	<b>Teaching assistant</b> of Field Plot Techniques, graduate level, University of Florida
Fall 2018	<b>Teaching assistant</b> of Field Plot Techniques, graduate level, University of Florida
Spring 2015	<b>Teaching assistant</b> of Calculus I, undergraduate level, University of São Paulo
Spring 2012	<b>Teaching assistant</b> of Genetics, undergraduate level, University of São Paulo
2011-2015	<b>Instructor</b> 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, <a href="#">link</a>
onemap	contributor, build genetic maps in experimental crosses, <a href="#">link</a>
onemap2pop	author, onemap extension to build multi-family genetic maps in outcrossing species, <a href="#">link</a>
fullsibQTL	co-author, QTL mapping in outcrossing species using composite interval mapping, <a href="#">link</a>
diaQTL	co-author, QTL mapping in multiparent and autopolyploid populations, <a href="#">link</a>
PedigreeSimR	author, simulation of multiparent and autopolyploid populations, <a href="#">link</a>

## 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, $\text{\LaTeX}$
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