

# Rodrigo Rampazo Amadeu

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## Education

Expected August 2021	PH.D. in Horticultural Sciences (Minor: Statistics), University of Florida, USA Dissertation: "Statistical methods for genomic-assisted blueberry breeding" Advisor Dr. Patricio Munoz, <a href="#">Blueberry Breeding &amp; Genomics Lab</a>
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, <a href="#">Statistical-Genetics Lab</a>
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

## Research Experience

2018-present	<b>University of Florida, USA</b> 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)
2016-2018	<b>University of São Paulo, Brazil</b> 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, fullsibQTL) - CNPq Scholarship
2014	<b>University of Florida, USA</b> 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) - Science without Borders Scholarship
2010-2015	<b>University of São Paulo, Brazil</b> 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 at Univ. of Florida
2012	Scholarship, Scientific Initiation - PIBIC/CNPq - 1yr
2011	Scholarship, Scientific Initiation - Santander - 1yr

## Journal Articles

### SUBMITTED MANUSCRIPTS (3)

- 2020 **Amadeu, RR**; Munoz, R; Zheng, C; Endelman, JB. "QTL mapping in outbred tetraploid (and diploid) diallel populations". *bioRxiv*, [link](#)
- 2020 Zheng, C; **Amadeu, RR**; Munoz, R; Endelman, JB. "Haplotype reconstruction in connected tetraploid F1 populations". *bioRxiv*, [link](#)
- 2020 Gazaffi, R\*; **Amadeu, RR**\* (\*contributed equally for this study); Mollinari, M; Rosa, JRBF; Taniguti, CH; Margarido, GRA; Garcia, AAF. "fullsibQTL: an R package for QTL mapping in biparental populations of outcrossing species". *bioRxiv*, [link](#)

### PUBLISHED IN PEER-REVIEWED JOURNALS (15)

- 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.*, TBA, [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 Experience

2021 **Seminar** "QTL mapping in tetraploid diallel populations". CGDG. *The Roslin Institute*, UK.  
 2020 **Seminar** "QTL mapping in autotetraploid multi-parent populations". *The 6<sup>th</sup> 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

Journals: BMC Genomics, Briefings in Bioinformatics

## 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](#)

## 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 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