

Antonio Augusto Franco Garcia

Professor Doctor

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1 Education

- 1986-1990 Bachelor in Agronomic Engineering, ESALQ/USP
1991-1993 MSc. in Plant Genetics and Breeding, Department of Genetics, ESALQ/USP
1993-1998 PhD in Plant Genetics and Breeding, Department of Genetics, ESALQ/USP
2004-2006 Postdoc in Statistical Genetics, North Carolina State University, Raleigh, USA

2 Positions

- 1995-1998 Researcher of the Sugarcane Breeding Program of Federal University of São Carlos (UFSCar)
1998-2002 Professor Doctor, Department of Exact Sciences, ESALQ/USP
2002-current Professor Doctor, Department of Genetics, ESALQ/USP

3 Selected Publication & Software

ARTICLES (10 SELECTED FROM A TOTAL OF 60)

- 2013 Garcia, A A F; Mollinari, M; Marconi, T G; Serang, O R; Silva, R R; Vieira, M L C; Vicentini, R; Costa, E A; Mancini, M C; Garcia, M O S; Pastina, M M; Gazaffi, R; Martins, E R F; Dahmer, N; Sforça, D A; Silva, C B C; Bundock, P; Henry, R J; Souza, G M; van Sluys, M-A; Landell, M G A; Carneiro, M S; Vincentz, M A G; Pinto, L R; Vencovsky, R; Souza, A P SNP genotyping allows an in-depth characterisation of the genome of sugarcane and other complex autopolyploids. *Scientifi Reports* 3: 1-10, 2013.
- 2012 Serang, O; Mollinari, M; Garcia, A A F. Efficient Exact Maximum a Posteriori Computation for Bayesian SNP Genotyping in Polyploids. *PLoS ONE* 7 (2): e30906
- 2012 Pastina, M M; Malosetti M; Gazaffi, R; Mollinari, M; Margarido, G R A; Oliveira, K M; Pinto, L R; Souza, A P ; van Eeuwijk, F A; Garcia, A A F. A mixed model QTL analysis for sugarcane multiple-harvest-location trial data. *Theoretical and Applied Genetics* 124: 835-849.
- 2010 Pinto, L R; Garcia, A A F; Pastina, M M; Teixeira, L H M; Bressiani, J A ; Ulian, E C; Bidoia, M A P; Souza, A P. Analysis of genomic and functional RFLP derived markers associated with sucrose content, fiber and yield QTLs in a sugarcane (*Saccharum spp.*) commercial cross. *Euphytica* 172: 313-327.
- 2009 Oliveira, K M; Pinto, L R; Marconi, T G; Mollinari, M; Ulian, E C; Chabregas, S M; Falco, M C; Burnquist, W; Garcia, A A F; Souza, A P. Characterization of new polymorphic functional markers for sugarcane. *Genome* 52: 191-209.

- 2009 Mollinari, M; Margarido, G R A; Vencovsky, R; Garcia, A A F. Evaluation of algorithms used to order markers on genetic maps. *Heredity* 103: 494-502.
- 2008 Garcia, A A F; Wang, S; Melchinger, A E; Zeng, Z.-B. Quantitative Trait Loci Mapping and The Genetic Basis of Heterosis in Maize and Rice. *Genetics* 180: 1707-1724.
- 2006 Garcia, A A F; Kido, E A; Meza, A N; Souza, H M B; Pinto, L R; Pastina, M M; Leite, C S; da Silva, J A G; Ulian, E C; Figueira, A V; Souza, A P. Development of an integrated genetic map of a sugarcane (*Saccharum spp.*) commercial cross, based on a maximum-likelihood approach for estimation of linkage and linkage phases. *Theor. Appl. Genet.* 112: 298-314.
- 2004 Garcia, A A F; Benchimol, L L; Barbosa, A M M; Geraldi, I O; Souza Jr., C L; Souza, A P. Comparison of RAPD, RFLP, AFLP and SSR markers for diversity studies in tropical maize inbred lines. *Genetics and Molecular Biology* 27 (4): 579-588.
- 2002 Lima, M L A; Garcia, A A F; Oliveira, K M; Matsuoka, S; Arizono, H; Souza Jr., C L; Souza, A P. Analysis of genetic similarity detected by AFLP and coefficient of parentage among genotypes of sugar cane (*Saccharum spp.*). *Theoretical and Applied Genetics* 104: 30-38.

BOOK CHAPTER (1 FROM A TOTAL OF 7)

- 2010 Pastina, M M, L R Pinto, K M Oliveira, A P Souza, and A A F Garcia. 2010. *Molecular Mapping of Complex Traits*. In *Genetics, Genomics and Breeding of Sugarcane*, ed. R J Henry and C Kole. CRC Press.

SOFTWARE

- 2007 OneMap (Software for constructing genetic maps in experimental crosses: full-sib, RILs, F₂ and back-crosses)
- 2008 WinQTLCartographer (module for QTL analysis of "MIM for Design III")

4 Current Research Grants

FAPESP - PRINCIPAL INVESTIGATOR

- 2009-2014 Genomic-assisted breeding of sugarcane: using molecular markers for understanding the genetic architecture of quantitative traits and to implement marker assisted selection. Coordinator: Prof. Dra. Anete Pereira de Souza

INCT (CNPQ, FAPESP)

- 2010-2014 National Institute of Science and Technology of Bioethanol. Coordinator: Prof. Dr. Marcos Buckeridge

RESEARCH FELLOWSHIP (CNPQ, LEVEL 1C)

- 2014-201 Models for QTL mapping in sugarcane and other polyploids

5 Current Students

POSTDOCS

- 2012-2014 Statistical models for a association mapping and G x E Studies in Plants. Dr. Rodrigo Gazaffi (FAPESP 2012/13272-6)

- 2012-2014 QTL Mapping in sugarcane using SNPs with all possible dosages. Dr. Marcelo Mollinari (FAPESP 2012/17009-8)
- PhD
- 2011-2015 Synteny between sorghum and sugarcane based on QTL and linkage mapping. Guilherme da Silva Pereira (FAPESP)
- 2011-2015 Structural equation modelling for QTL mapping in maize. Adriana Cheavegatti Gianotto (CNPq)
- 2012-2016 Coalescence studies in an diversity panel of sorghum. João Ricardo Bachega Feijó Rosa (CNPq)
- 2012-2016 Association mapping for the brazilian panel of sugarcane genotypes. Carina de Oliveira Anoni (CNPq)
- 2013-2017 Genomewide selection in *Cophea canephora*. Luis Felipe Ventorim Ferrão (CAPES)
- 2013-2017 Genetic mapping in *Acca sellowiana*. Marianella Fernanda Quezada Macchiavello (CAPES)
- 2013-2017 Genetic mapping in autopolyploids. Letícia Aparecida de Castro Lara (CAPES)

6 Summary

- 60 Articles
- 7 Book Chapters
- 7 MSc graduated students advisored
- 9 PhD graduated students advisored

7 Other Information

ASSOCIATED EDITOR

- 2012-2014 *Scientia Agricola*
- 2013- *Theoretical and Applied Genetics*

SELECTED TALKS

- 2013 Genetic Mapping in Sugarcane and Other Autopolyploids. Wageningen University (The Netherlands), and Galway University (Ireland).
- 2009 Genetic Architecture of Quantitative Traits in Sugarcane. Workshop FAPESP Bioenergy Program (BIOEN)
- 2006 QTL Mapping and The Genetic Basis of Heterosis. Department of Genetics, North Carolina State University

AD HOC REFEREE

Several journals, including: Theoretical and Applied Genetics; Genetical Research; Molecular Breeding; Genetics and Molecular Biology; Scientia Agricola; Hereditas; BMC Bioinformatics; Euphytica; Genetics; G3; PLOS ONE.