

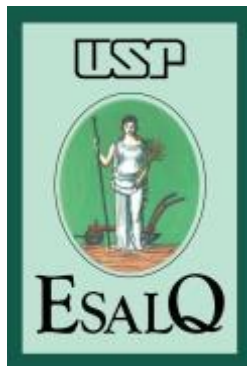
Bioinformatics Applied to Bioenergy

Gabriel Rodrigues Alves Margarido

Departamento de Genética

Escola Superior de Agricultura "Luiz de Queiroz"

Universidade de São Paulo

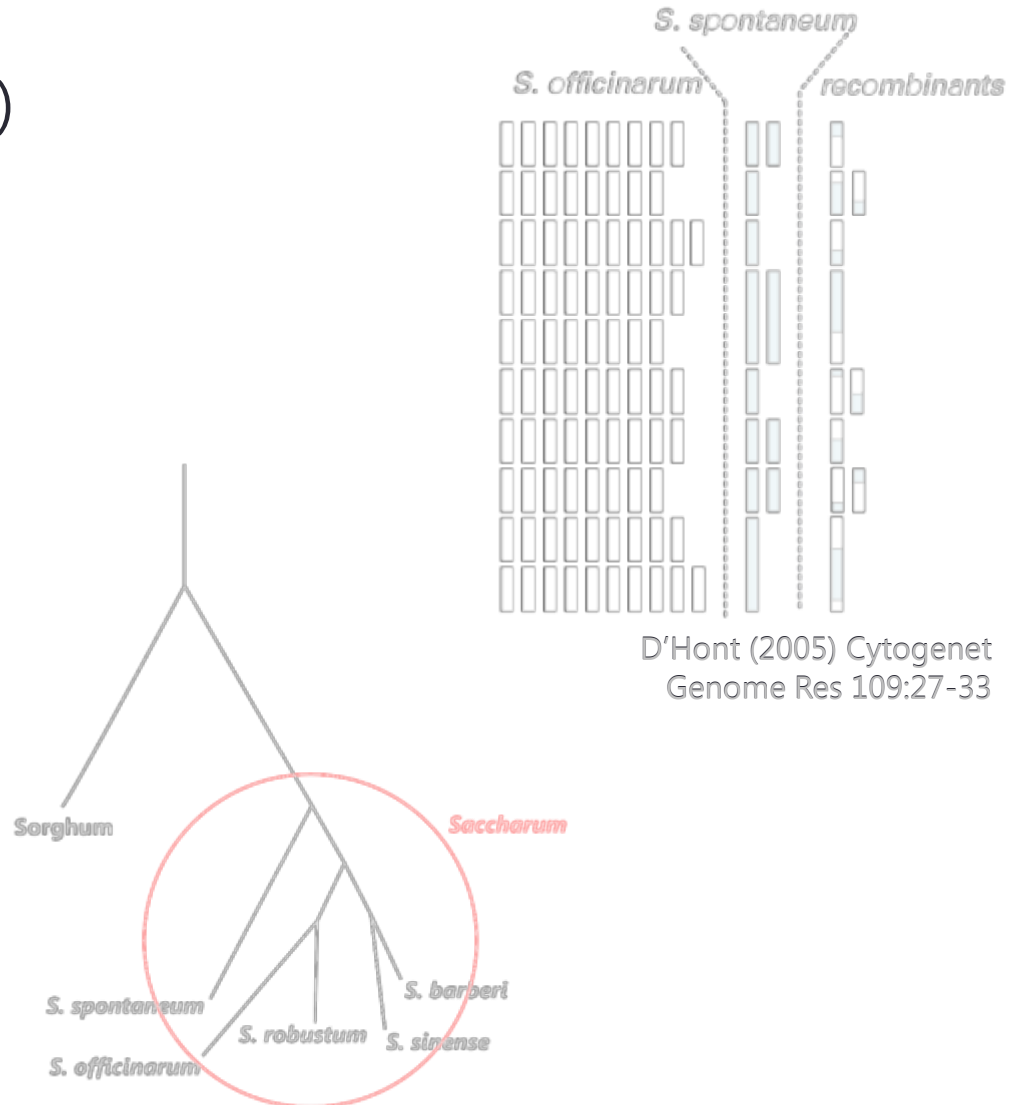


Research Project

- Sugarcane (*Saccharum* spp.)
 - Interspecific hybrid
 - Polyploid genome
 - Big genome



Source: www.hipersuper.pt

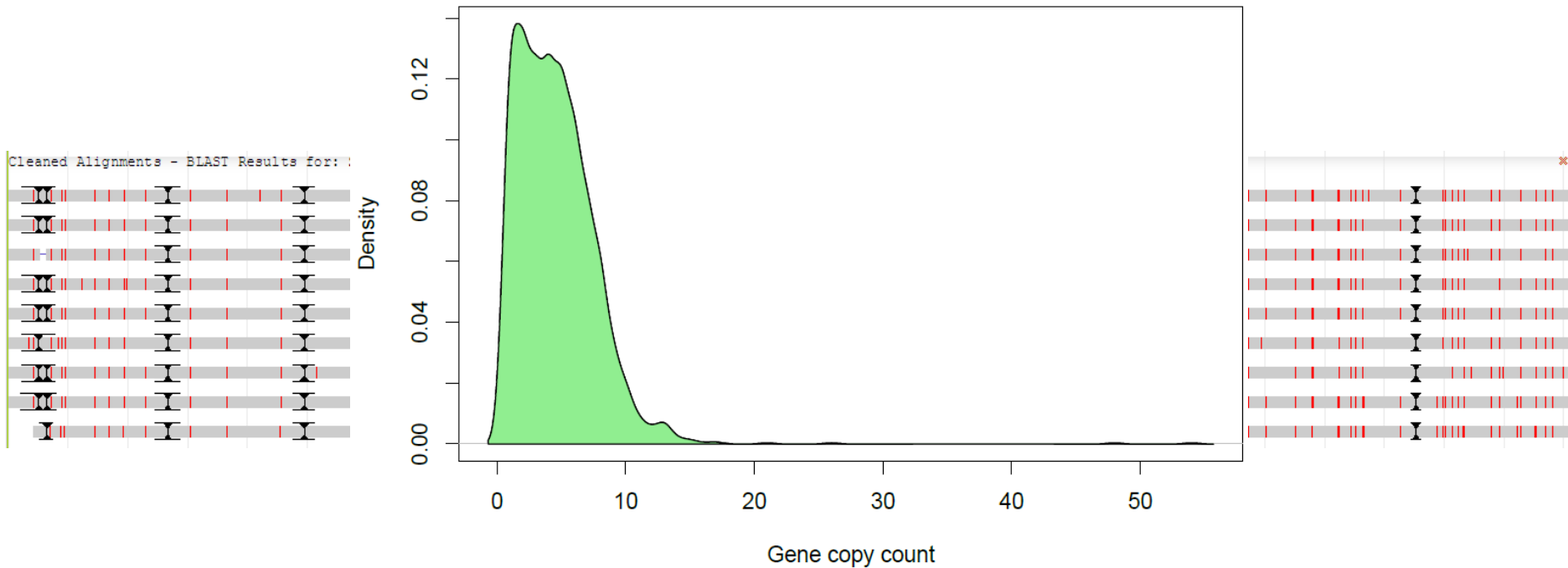


Research Project

- Assembly of a sugarcane genome reference



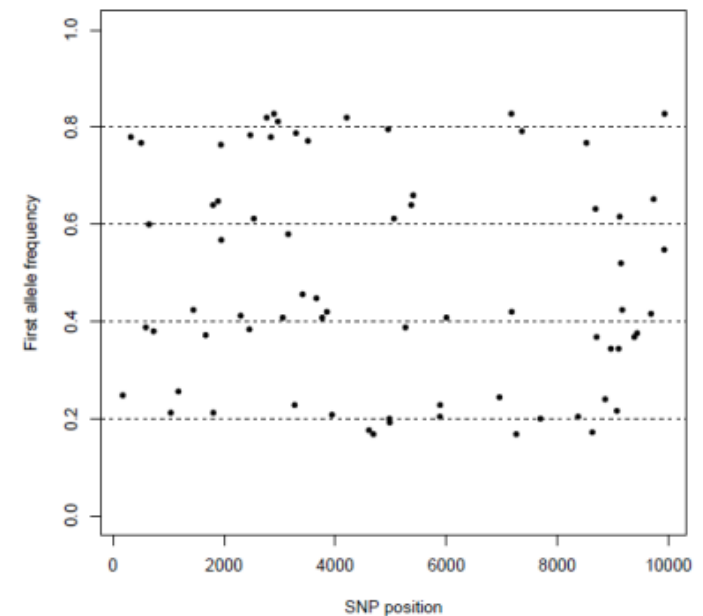
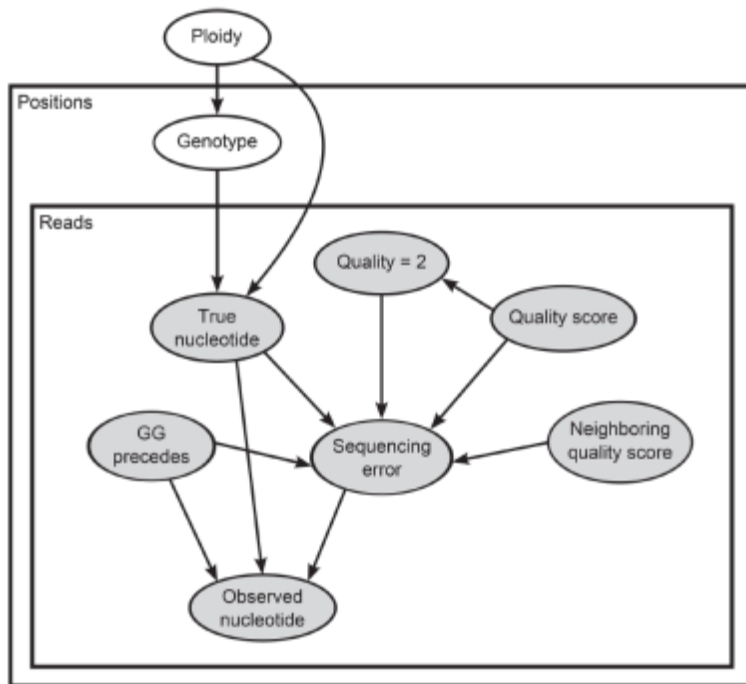
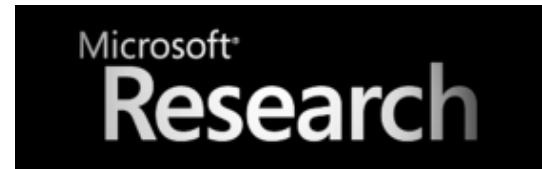
Cold
Spring
Harbor
Laboratory



Research Project

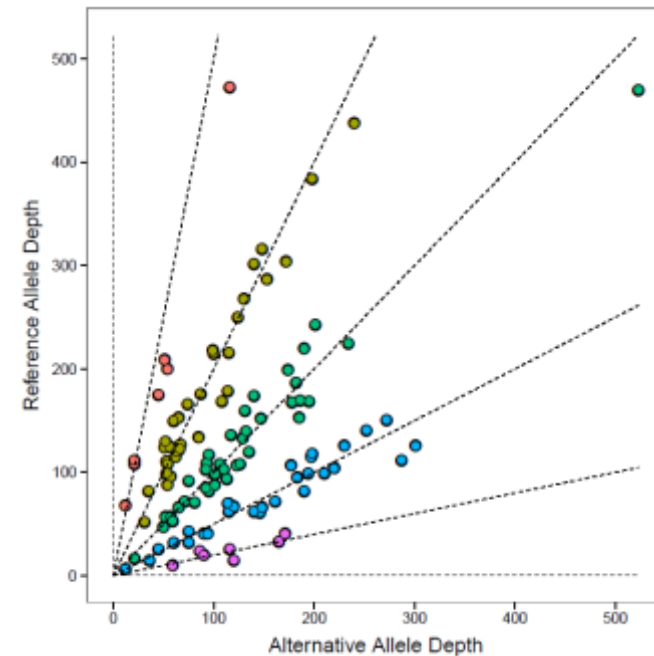
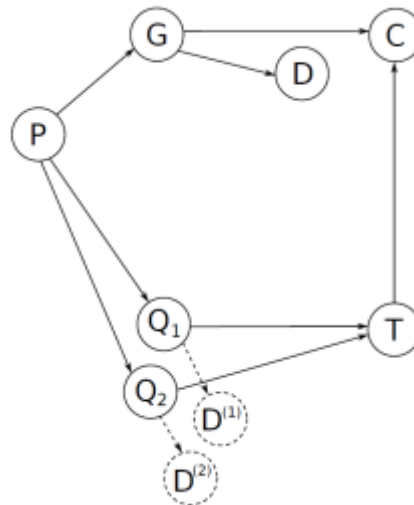
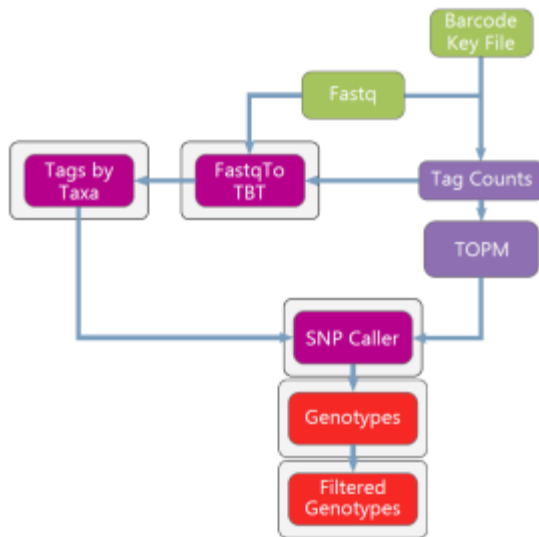
- Ploidy estimation in polyploid genome assemblies

USP



Research Project

- Genotyping-by-sequencing of sugarcane



Adapted from Glaubitz et al. (2014)
PLoS ONE 9:e90346

Adapted from Serang et al. (2012)
PLoS ONE 7:e30906

Research Project

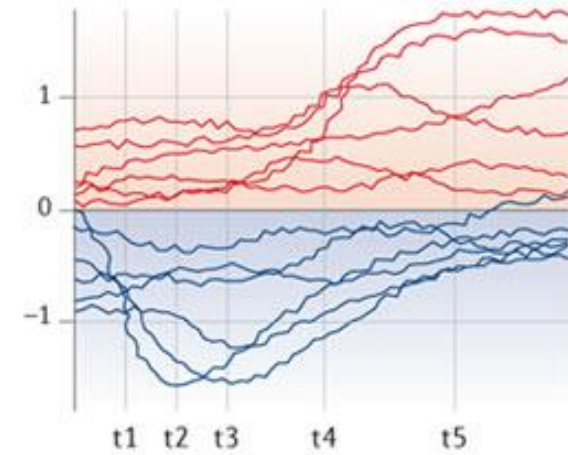
- Sugarcane functional genomics



Source: APSnet



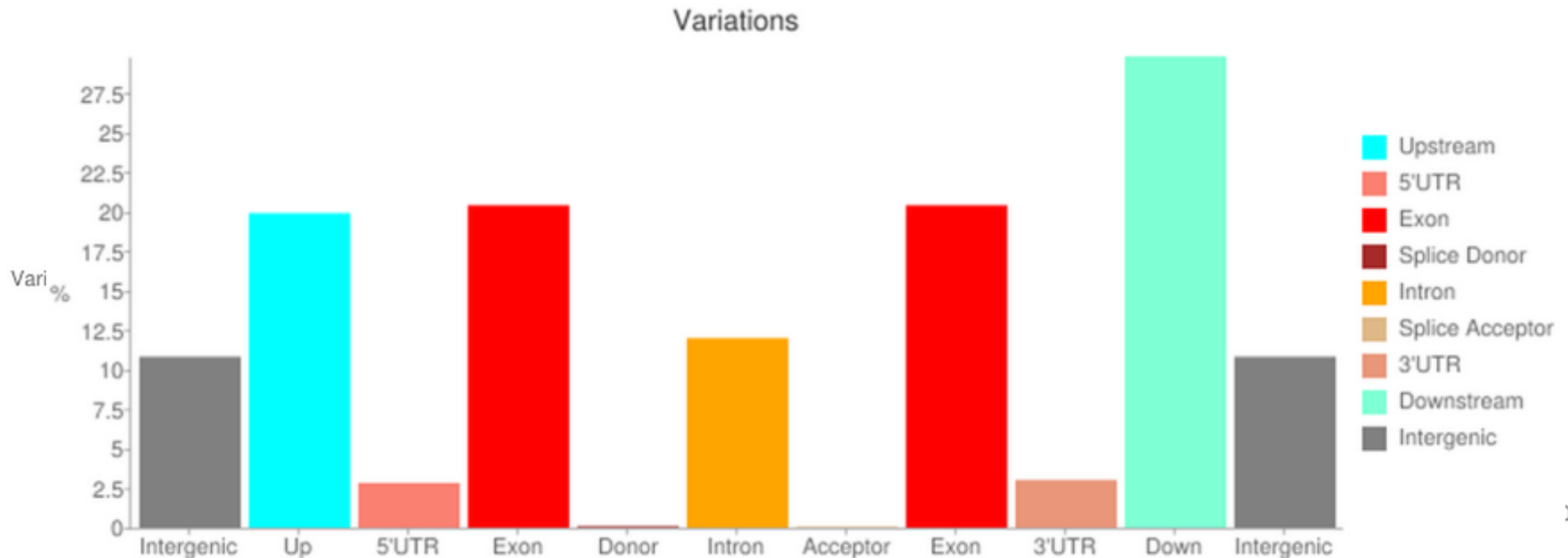
Source: ESALQ



Bar-Joseph et al. (2012) Nat Rev Genet 13:552-564

Research Project

- Selection signatures in sugarcane



Research Project

- Genomic selection in high biomass sorghum



Research Grants

- PITE 2012/51062-3
 - Development of an Algorithm for the Assembly of the Sugarcane Polyploid Genome
 - Prof. Glaucia Mendes Souza
 - David Heckerman
 - Associate Investigator

- CAPES Biocomputacional 23038.010031/2013-70
 - Computational Biology in the Analysis of Genetic Variability
 - Prof. Anete Pereira de Souza
 - Co-Principal Investigator



Research Grants

- CNPq Universal 459162/2014-4
 - Differential Expression of Genes Involved in Sucrose Accumulation in *Saccharum* Genotypes
 - Principal Investigator



- INCT 2014
 - Bioethanol National Institute of Science and Technology
 - Prof. Marcos Silveira Buckeridge
 - Co-Principal Investigator

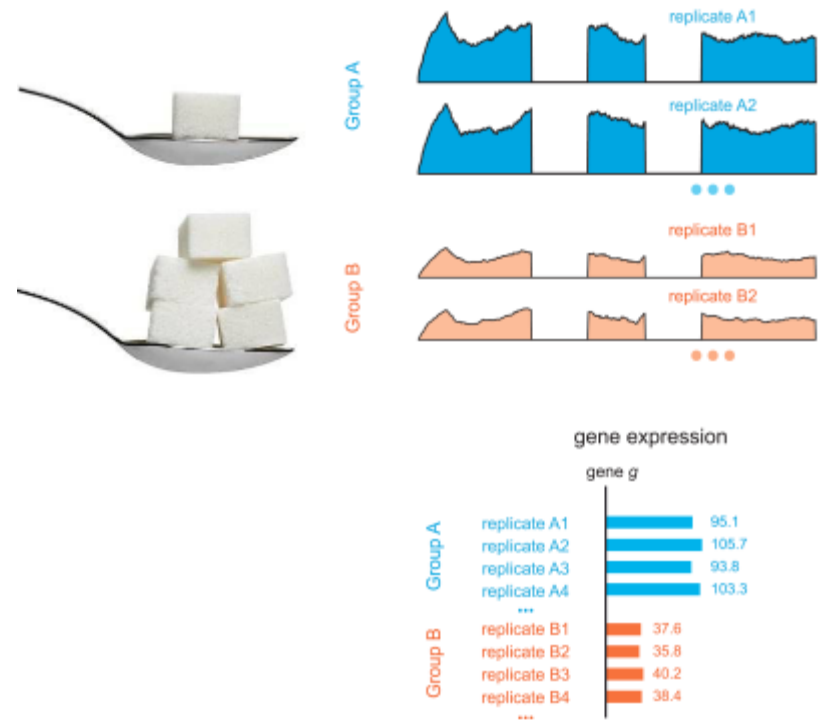


- Thematic Project FAPESP (Prof. Luiz Lehmann Coutinho)
- Young Researcher FAPESP (Prof^a. Maria Carolina Quecine Verdi)



Research Grants

- Young Researcher Grant Proposal
 - *Saccharum* spp.
 - Functional Genomics
 - Leveraging (natural) variability
 - Identification of loci of interest
- Sucrose accumulation
- Other energy uses
- Stress resistance



Adapted from Hu et al. (2013)
Nucl Acids Res 41:e39
Photo: PicsFive/Shutterstock