

Curriculum Vitae – Christy Marais

Christy Marais (Garritsen)
Forest Molecular Genetics (FMG)
Department of Genetics
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Summary

I am a geneticist with particular interest in the application of molecular tools in breeding programs. I currently work as a research assistant in the Forest Molecular Genetics (FMG) research group at the University of Pretoria, in affiliation with the Genomics Research Institute and the Forest and Agricultural Biotechnology Institute (FABI). The focus of our work is the use of population genetics in molecular breeding, particularly DNA microsatellite and SNP markers, in South African *Eucalyptus* and Pine species. My MSc study was in Animal Breeding and Genetics focussing on the benefits of parentage verification for genetic progress in commercial Angora goat herds. I have extensive experience in laboratory work and data analysis with undergraduate level proficiency in farm animal management and nutrition.

Personal details

Date of birth: 23 July 1987
Age: 29 years
Marital status: Married
Nationality: South African
Drivers license: Code B (light motor vehicle)
Languages: English, Afrikaans, isiZulu

Education

2011 - 2013: MSc(Agric): Animal Breeding and Genetics, The impact of DNA parentage verification on EBV estimation and sire ranking in South African Angora goats. University of Pretoria, South Africa. Cum Laude

2010: BSc(Hons): Animal Science
University of Pretoria, South Africa

2006 - 2009: BSc: Animal Science
University of Pretoria, South Africa

2001 - 2005: Port Shepstone High School

Employment history

Professional

2014 - Present **Research assistant in the DNA Fingerprinting Team**, Forest Molecular Genetics Research Group, Department of Genetics, University of Pretoria

2011 - 2013 **Technical assistant for the Animal Breeding and Genetics Research Group**, Department of Animal and Wildlife Sciences, University of Pretoria

Breeding research

2011 – 2013 **Animal breeding and genetics, including quantitative and molecular animal improvement strategies**. Animal Breeding and Genetics, Department of Animal and Wildlife Sciences, University of Pretoria.

2014 – present **DNA fingerprinting and tree improvement**, Forest Molecular Genetics (FMG) Research Group, Department of Genetics, Forestry and Agricultural Biotechnology Institute (FABI), University of Pretoria

Publications

Garritsen, C., 2013. The impact of DNA parentage verification on EBV estimation and sire ranking in South African Angora goats. MSc dissertation. University of Pretoria, Pretoria, South Africa

Garritsen, C., van Marle-Köster, E., Visser, C., 2015. The impact of DNA parentage verification on breeding value estimation and sire ranking in South African Angora goats. *Smal Rumin. Res.* 124(30 – 37)

Conference posters

Garritsen, C., Visser, C., Van Marle-Köster, E., 2013. EBVs and sire ranking: the impact of pedigree integrity on selection in South African Angora goats. *64th Annual Meeting of the European Federation of Animal Science, Nantes, France*

Visser, C., **Garritsen, C.**, Van Marle-Köster, E., 2013. Improved linkage maps for goat chromosomes (CHI) 24 and 25. *46th Congress of the South African Society for Animal Science, Bloemfontein, South Africa*

Engelbrecht, A., Henning, J.S., Reynolds, S.M., **Marais, C.**, Myburg, AA., 2016. High-throughput SNP-based fingerprinting of *Eucalyptus* species and hybrids for routine breeding applications. *4th Joint Congress of the South African Society for Bioinformatics (SASBi) and the South African Genetics Society (SAGS), Durban, South Africa*

Professional memberships and associations

South African Society for Animal Science (SASAS)

Golden Key International Honour Society

Forestry and Agricultural Biotechnology Institute (FABI)

Genomics Research Institute (GRI)

Scholarships and awards

2014 Bronze medal for a meritorious dissertation, South African Society for Animal Science (SASAS) <http://www.sasas.co.za/awards>

2011 The Professor Bonsma bursary, Department of Animal and Wildlife Sciences, University of Pretoria

Technical skills

Molecular genetics laboratory skills

DNA extraction from plant and animal samples

DNA quality control

PCR and DNA marker panel optimisation

Fragment-based genotyping

Robotic liquid handling – programming, optimisation and operation

Data analysis skills

Development of DNA marker panels

Genotype scoring (fragment analysis)

Confirmation of identity (clonal analysis)

Parentage analysis and relationship testing

Species discrimination

Statistical evaluation of DNA marker performance

Genomic mapping

Application of breeding values for breeding goals

Management experience

Training postgraduate students

Training new staff members

Inventory management

Managing industry projects – task delegation and deadlines

Laboratory and analysis troubleshooting
Farm animal husbandry
Large stock (dairy cattle)
Small stock (sheep and goats)
Poultry (broiler and layer hens)
Pigs
Horses

Reporting
Scientific report writing
Oral presentations and workshops

Interests

Sewing, reading, crocheting, guitar, gardening, horse riding, animal breeding, genetics and genomics

Referees

Dr Carina Visser
(MSc supervisor)

Animal Breeding and Genetics
Department of Animal and Wildlife Sciences
University of Pretoria

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Prof Esté van Marle-Köster
(MSc co-supervisor, HOD)

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Ms Melissa Reynolds
(Current manager)

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