

ABBREVIATED CURRICULUM VITAE OF MARGUERITE BLIGNAUT

Personal information

Surname	Blignaut
First names	Marguerite
ORCID ID	0000-0001-7645-9780

Main Areas of Professional Expertise and Experience:

My main areas of expertise are in biological, cardiovascular, genetic and biochemical laboratory-based research with a strong background in molecular biology. I am interested in the post-transcriptional regulation of signalling pathways, cellular metabolism, and mitochondrial function in a cardiovascular context. My research focus on the characterisation of molecular pathways as well as mitochondrial function and dynamics, focussing specifically on Ataxia Telangiectasia Mutated protein kinase, as a potential biomarker and treatment target in cardiovascular disease, using *in vitro* cell-based studies, *ex vivo* animal models and microscopy.

Work experience

2021-current	Researcher: Centre for Cardio-metabolic Research in Africa (CARMA)
2019 - 2020	Post-Doctoral Research Fellow: Division of Medical Physiology, Stellenbosch University
2016 - 2020	Lecturer's assistant: Division of Medical Physiology, Stellenbosch University

Societies and affiliations

2016 - current	Physiological Society of Southern Africa (PSSA)
2009 - 2010	South African Society for Biochemistry and Molecular Biology (SASBMB)
2011 - 2015	Epigenetics Society

Research Outputs:

Peer Reviewed Journal Articles:

Blignaut, M., Harries, S., Lochner, A., Huisamen, B. Ataxia-Telangiectasia Mutated protein kinase: potential master puppeteer of oxidative stress-induced metabolic recycling (2020) *Oxidative Medicine and Cellular Longevity*, under review.

Dube, K., Dhanabalan, K., Salie, R., **Blignaut, M.**, Huisamen, B., Lochner, A. Melatonin has profound effects on mitochondrial dynamics in myocardial ischaemia/reperfusion (2019) *Heliyon* 5 (10), e02659

Blignaut, M., Loos, B., Botchway, SW., Parker, AW., Huisamen, B. Ataxia-Telangiectasia Mutated protein kinase is located on the inner mitochondrial membrane of rat cardiac mitochondria (2019) *Scientific Reports*, 9, 4782. DOI:10.1038/s41598-019-41108-1

Blignaut, M., Espach, Y., van Vuuren, M., Dhanabalan, K., Huisamen, B. Revisiting the cardiotoxic effect of chloroquine (2019) *Cardiovascular Drugs and Therapy*; 33(1):1-11. DOI:10.1007/s10557-018-06847-9

Le Roux, JJ., **Blignaut, M.**, Gildenhuis, E., Mavengere, N., Berthouly-Salazar, C. The molecular ecology of biological invasions: What do we know about non-additive genotypic effects and invasion success? (2013) *Biological Invasions*, 16, 997–1001. DOI: 10.1007/s10530-013-0568-y

Blignaut, M., Ellis, A., Le Roux, J.J. Towards a transferable and cost-effective plant AFLP protocol (2013) *PLoS ONE*, 8(4). e61704. doi:10.1371/journal.pone.0061704

du Preez, J., Stephan, D., **Blignaut, M.**, Stander, C., Vivier, M.A., Goszczynski, D.E., Mawassi, M., Burger, J.T. The characterisation of virus-based vectors for functional genomic studies in grapevine (2010) *Australian Journal of Grape and Wine Research*, 16 , A68.

Book Chapter:

Blignaut, M. (2012) Review of Non-coding RNAs and the epigenetic regulation of gene expression: Drivers of Natural Selection by Kevin Morris (editor). *Epigenetics*, 7:6

Popular Science Article:

Blignaut, M (2020) Why it's vital to look beyond the hype about repurposed malaria drugs. The Conversation. <https://theconversation.com/why-its-vital-to-look-beyond-the-hype-about-repurposed-malaria-drugs-139153>

International Conferences:

Blignaut, M., Loos, B., Botchway, SW., Parker, AW., Huisamen, B. (2019) Ataxia-Telangiectasia Mutated is located in cardiac mitochondria and impacts oxidative phosphorylation. 18th International Ataxia-Telangiectasia Workshop, Houston, Texas, USA. 1-4 May

Huisamen, B., **Blignaut, M.**, Engelbrecht, A-M., Lochner, A. (2019) ATM regulates cardiac mitophagy. 18th International Ataxia-Telangiectasia Workshop, Houston, Texas, USA. 1-4 May

Botha, D., Blignaut, M., Huisamen, B. (2019) A potential mechanism of cardiac ATM down-regulation in obesity and insulin resistance: are microRNAs the molecular middlemen? 47th Physiology Society of Southern Africa Annual Conference, ICC, East London, 18th-21st August

Huisamen, B., Blignaut, M., Lochner, A. (2019) ATM regulates cardiac mitochondrial oxidative phosphorylation potential. Society for Heart and Vascular Metabolism, Amsterdam, Netherlands. 23-26th June

Blignaut, M., Lochner, A., Engelbrecht, A-M., Huisamen, B (2019). Ataxia-telangiectasia mutated (ATM) protein kinase mediates autophagy and mitochondrial dynamics in the heart, 47th Physiology Society of Southern Africa Annual Conference, ICC, East London, 18-21st August

Blignaut, M., Lochner, A., Engelbrecht, A-M., Huisamen, B. (2019) Cardiac autophagy and mitophagy in obesity is mediated by ATM. 4th European-SA Cardiovascular Workshop held in conjunction with 6th International New Frontiers in Cardiovascular Research workshop, STIAS, Stellenbosch, 1-4th April

- Huisamen, B., Blignaut, M. (2019) ATM and metabolic protection of the heart. 4th European-SA Cardiovascular Workshop held in conjunction with 6th International New Frontiers in Cardiovascular Research workshop, STIAS, Stellenbosch, 1-4th April
- Huisamen, B., **Blignaut, M.**, Lochner, A. (2017) ATM regulates cardiac mitochondrial oxidative phosphorylation potential, *Frontiers in CardioVascular Biology* 2018, Vienna, Fifth Congress of the ESC Council on Basic Cardiovascular Science, Cardiovascular Research (S22)
- Blignaut, M.**, Lochner, A., Huisamen, B. (2017) The role of mitochondrial ATM in cardiac oxidative phosphorylation and obesity. Keystone Symposium on Mitochondria, Metabolism and Heart, Santa Fe, New Mexico, USA, May 8 - May 12th
- Blignaut, M.**, Le Roux, J. J., Ellis, A., Esler, K. (2011) Comparative epi-genetic and genetic population structure of the highly invasive bunch grass, *Pennisetum setaceum* along an environmental gradient in South Africa. 11th International Conference on the Ecology and Management of Alien Plant Invasions, Szombathely, Hungary
- Blignaut, M.**, Louw, A. (2009) The implications of glucocorticoid receptor dimerization at diverse models of glucocorticoid transcription. 10th Baltic Summer School: Genetic basis of Medicine, Kiel, Germany
- Du Preez, J., Stephan, D., **Blignaut, M.**, Stander, C., Vivier, M. A., Gozsczynski, D., and Burger, J. T. (2008) The characterization of virus-based vectors for functional genomic studies in grapevine. Eighth international symposium on grapevine and biotechnology, Adelaide, Australia.

Local Conferences:

- African Laser Centre workshop on laser spectroscopy and laser imaging, Stellenbosch (2019): invited lecture
- 44th Conference of the Physiology Society of Southern Africa, Cape Town (2016): first author presentation
- Trilateral Mitochondrial Workshop (UK-Egypt-SA): Enhancing physiological understanding of exercise and obesity: designing personalized intervention strategies. Stellenbosch (2017): first author poster presentation

Other Presentations:

- Annual Biomedical Research day at Stellenbosch University: three first author presentations (2016, 2017, 2018), plenary presentation (2019)
- Annual Academic Day, Medicine and Health Sciences Faculty at Stellenbosch University: three first author presentations and posters (2016, 2018, 2020)

Student supervision:

- BSc honours: Miss Lois Williams (co-supervisor, 2016); Miss Danelle Botha (co-supervisor, 2018), Miss Sarah Harries (supervisor, 2019), Miss Malukah Hamza (supervisor, 2020)
- MSc: Miss Danelle Botha (co-supervisor, awarded 2020), Miss Sarah Harries (co-supervisor, 2019-current), Mr Joshua Matthee (co-supervisor, 2019-current)

Successful grant applications:

2017-2020: Harry Crossly Foundation project funding (SU-PT-16/10-00012); Stellenbosch University small equipment grant funding

International and local collaborations:

- Self-initiated international collaboration with Profs. SW Botchway and AW Parker at Rutherford Appleton Laboratories, Science and Technology Facility Council in Didcot, Oxfordshire. This Newton-funded collaboration has yielded one publication and a four month visit to RAL in January 2018 as well as a follow up visit in September 2019.
- Collaboration with Dr Hannibal Musarurwa (Walter Sisulu University) on gut microbiota changes in obesity (2020)

Leadership Roles

- | | |
|--------------------|---|
| 2019 - 2020 | Vice-chairperson (Faculty of Medicine and Health Sciences) of the Postdoctoral Society, Stellenbosch University |
| 2006 | Vice-chairperson of the Natural Science Student Council, Stellenbosch University |

Community work:

- | | |
|--------------------|--|
| 2014 - 2019 | Volunteer at Cheetah outreach, Somerset west |
|--------------------|--|