

Curriculum Vitae of ...Erna Marais.....

Personal Information

Title:	DR
Surname	MARAIS (nee TROMP)
First names	ERNA
Nationality	SOUTH AFRICAN
Date of birth	11 JUNE 1967
Place of Birth (City, Country)	CAPE TOWN, SOUTH AFRICA
Gender	FEMALE

Contact Information

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Professional Career and Positions held/employment history (name of employer, capacity and/or type of work, period of employment)

1990-1992	Temporary Research Assistant at Dr A.J.S. Benadé, Research Institute for Nutritional Diseases, Medical Research Council, Parow, South Africa
1993-1996	Temporary Research Assistant at Prof A. Lochner, Department of Medical Physiology and Biochemistry, Faculty of Medicine, University of Stellenbosch, Tygerberg Campus, South Africa
1997-1999	Temporary Technical Officer at Prof A. Lochner, Department of Medical Physiology and Biochemistry, Faculty of Medicine, University of Stellenbosch, Tygerberg Campus, South Africa
1999-2009	Permanent Technical Officer at Prof A. Lochner, Department of Medical Physiology and Biochemistry, Faculty of Medicine, University of Stellenbosch, Tygerberg Campus, South Africa
2009-2019	Lecturer, Division of Medical Physiology, Department of Biomedical Sciences, Faculty of Medicine and Health Sciences, University of Stellenbosch, Tygerberg Campus, South Africa
2019-present	Senior Lecturer, Division of Medical Physiology, Department of Biomedical Sciences, Faculty of Medicine and Health Sciences, University of Stellenbosch, Tygerberg Campus, South Africa

Tertiary Educational Qualifications (degrees/diplomas, fields of study, institutions, and dates of completion)

1985	Matriculate at Central High School, Beaufort West, South Africa
1988	B.Sc. degree (Biochemistry and Physiology), University of Stellenbosch, South Africa
1989	B.Sc. Hons. degree (Biochemistry), University of Stellenbosch, South Africa
1997	M.Sc. degree (Biochemistry), University of Stellenbosch, South Africa: Effect of gamma-linolenic acid (GLA) and eicosapentaenoic acid (EPA) supplementation on the structure and composition of low density lipoproteins (LDL) in African Vervet Monkeys

2002 Ph.D. degree (Medical Physiology and Biochemistry), University of Stellenbosch, South Africa: Role of cyclic adenosine monophosphate (cAMP), cyclic guanosine monophosphate (cGMP) and p38 mitogen activated protein kinase (p38 MAPK) in preconditioning of the ischaemic myocardium.

Continuing Professional Development, Courses and Other Qualifications

1997 SACI-Chrom SA course/workshop on High Pressure Liquid Chromatography, University of Stellenbosch, South Africa

2007 Education for the humane use and care of Laboratory animals and for promoting quality of experimental results accreditation course, University of Stellenbosch, South Africa – 12 Lectures (1 hour each) – Completed - Attendance

2010 Professional Educational Development for Academics (PREDAC), University of Stellenbosch, South Africa: Completed – Attendance

2012 The question of ‘doctorateness’: An International Workshop for Postgraduate Supervisors and Doctoral Candidates, Centre for Higher and Adult Education, University of Stellenbosch, South Africa: Completed - Attendance

2014 Introduction to Teaching in the Health Professions (ITHP) Short Course University of Stellenbosch, South Africa: Completed - Attendance

2014 Introduction to Blended Learning Design and Support, University of Stellenbosch, South Africa: Completed - NQF level: 7 and Credits: 6

2016-present SAVC (South African Veterinary Council) Authorization to perform research as laboratory animal technologist

2016 Publishing Workshop - International Presenter - Executive Editor BMC-Attendance

2016 Workshop for Postgraduate programme coordinators and administrative officers involved in processing postgraduate applications, 19 July 2016

2018 Camtasia Studio Workshop, presenter Thys Murray, 30 May 2018 - Attendance

2018 Understanding the Policies relevant to the Management of Research Contracts workshop, STIAS, 7 June 2018 – Attendance

2018 Occupational Health and Safety training, Dynamikos, 26 March 2018 - Fire Team Member

2019 Selected to attend the FMHS’s 6 day Leadership Development Programme (LDP) and personal professional coaching sessions - Completed - Attendance

2020 Good Laboratory Practice (GLP) Implementation According to OECD Principles, Quality First Academy (Pty) Ltd, 4 – 5 February 2020 - Completed - Attendance

Field of Study, Major Research Topics and Scientific Interests

Cardiovascular disease, Ischaemic/Reperfusion injury, Obesity, Cardioprotection; Vasculoprotection; Cardiovascular signal transduction, Cell signalling (Western blotting technology), Rat heart perfusion technology; Melatonin; Rooibos; Exchange protein directly activated by cAMP (Epac) signalling

Honours, Awards, Prizes, and Scientific, Teaching and Scholarly Recognition

2000 Winner of the Young Investigators Award at the 1st Congress of the South African Heart Association, Stellenbosch, South Africa.

2001 Poster prize at the XVII World Congress of the International Society for Heart Research, Winnipeg, Canada (published in J Mol Cell Cardiol, 2001, 33; A70).

2002 Invited Oral Presentation at the European Society of Cardiology, Berlin, Germany (published in European Heart Journal: Journal of the European Society of Cardiology, 2002, 23; (Abstr Suppl): P244).

- 2003** Winner of the Young Investigators Award at the South African Heart Congress, Cape Town (published in Cardiovascular J of South Africa, 2003: 272).
- 2009** Co-supervisor of Mr Gerald Maarman (MSc) won the prize for the best Young Investigator presentation at the Annual Academic Day of the Faculty of Health Sciences at Tygerberg campus.
- 2012** Supervisor of Mr Ryan Jansen van Rensburg (Hons) received a Merit award for one of the top three Honours students at the nationally attended conference of the Physiological Society of Southern African.
- 2015** Mentor/Supervisor of Mr Zibele Ndlovu (NRF-DST intern), received the Award for Best Oral Presentation at NRF-DST Research Day

Grants and Research Funding received

- 1998-2000** National Research Foundation (NRF) Grant-holder bursary for Doctoral studies
- 2002-2007** Co-researcher of the following main project: "Myocardial pathophysiology". – Supported by the Foundation for Research Development (FRD)
- 2004-2006** Primary researcher of the following project: "Investigating the respective roles of exchange protein directly activated by cAMP (Epac), the enzyme protein kinase A (PKA) and cAMP response element binding protein (CREB) in ischaemic preconditioning mediated cardioprotection". - Supported by Medical Research Council (MRC) and Harry/Dorris Crossley Trust
- 2007-2009** Primary researcher of the following project: "The significance of exchange protein directly activated by cAMP (Epac) in ischaemic preconditioning mediated cardioprotection". - Supported by Medical Research Council (MRC) and Harry/Dorris Crossley Trust
- 2008-2012** National Research Foundation (NRF) Grant-holder in the Incentive Funding for Rated Researchers Programme.
- 2009-2013** National Research Foundation (NRF) Grant-holder in the Institutional Research Development Programme (IRDP) for the project titled "Epac mediated cardioprotection" as part of our Research Niche Area on Molecular and Cellular processes in Cardiovascular Degeneration: Strategies for Prevention and Protection.
- 2010-2013** Primary researcher of the following project: "The role of exchange protein directly activated by cAMP (Epac) in ischaemic heart disease and hypertrophy". - Supported by Medical Research Council (MRC) and Harry/Dorris Crossley Trust
- 2014** Primary researcher of the following project: The role of exchange protein directly activated by cAMP (Epac) in mediating cardioprotection. - Supported by Harry/Dorris Crossley Trust
- 2018-2020** Primary researcher of the following project: "The role of Epac (exchange protein directly activated by cAMP) in obesity-induced cardiovascular" supported by National Research Foundation (NRF) 3-year grant for Competitive Support for Unrated Researchers.
- 2018-2020** Main researcher (project leader: Dr G Maarman) of the following project: "Underlying mechanisms of Rooibos-induced cardioprotection in apoptosis and hypertrophy: Ascertaining signaling pathways involved and the roles of oxidative stress and mitochondrial efficiency" supported by SA Rooibos Council grant.
- 2018-2020** Main researcher (project leader: Dr G Maarman) of the following project: "Rooibos-induced cardioprotection: Investigating the roles of mitochondrial antioxidant systems, metabolic processes and mitochondrial dynamics." supported by MRC Self-Initiated Research (SIR) 3-year grant.

Membership of National and International Scientific and Teaching Societies, Associations, Bodies and Committees

1993-present	Member of the Physiological Society of Southern Africa (PSSA)
2016-present	Member of the South African Heart Association (SAH) and joined special interest group, South African Society for Cardiovascular Research (SASCAR)
2009	Reviewed application for ethical clearance for the use of animals requested by Subcommittee B of the Research Committee, Stellenbosch University: Titled "A Skeletal Muscle Injury Model For Mice" by Dr F Macaluso, Department of Physiological Sciences, Stellenbosch University, March 2009
2009	Reviewed application for ethical clearance for the use of animals requested by Subcommittee B of the Research Committee, Stellenbosch University: Titled "Comparison of two NSAID treatment regimes for contusion injury: a study in rats" by Dr Carine Smith, Department of Physiological Sciences, Stellenbosch University, October 2009
2011	Member of evaluation committee for approval of application for a PhD study – Ms Anjo Steyn (CSIR). Title: "Differential inhibition of adenylylated and deadenylylated Mycobacterium Tuberculosis glutamine synthetase at ATP scaffold-based inhibitors", from the Faculty of Health Sciences at the University of Stellenbosch.
2012	Member of evaluation committee for approval of application for a PhD study – Michelle Smit van Schalkwyk (13802135); Title: "Rooibos and melatonin: Putative modulation of the nicotine induced effects of vascular function", from the Faculty of Health Sciences at the University of Stellenbosch.
2012	Member of evaluation committee for approval of application for a PhD study – Margot Flint (14274205); Title: "Gamete proteomic profile of male patients suffering from sexually transmitted infections", from the Faculty of Health Sciences at the University of Stellenbosch.
2013	Member of evaluation committee for approval of application for a PhD study– Mr PV Dlodla; Title: Compounds specific to Aspalathus linearis protects the diabetic heart against oxidative stress: a mechanistic study, Diabetes Discovery Platform (DDP), MRC.
2017	Member of evaluation committee for approval of application for a PhD study– Dr YM Azar; Title: An investigation into the effects of prolonged exposure to a pathological micro-environment associated with diabetes mellitus in vivo on the regenerative potential of mesenchymal stem cells, from the Faculty of Health Sciences at the University of Stellenbosch.

Membership of Institutional Scientific and Teaching Committees and Academic Bodies

2009-2011	Member of the Annual Academic Day Committee as Representative of Basic Sciences, Faculty of Health Sciences, Stellenbosch University.
2012-2014	Chairperson for the pre-clinical and clinical module in Digestive System (GIT271) for the MBChB2 programme.
2015-present	Secundus for the pre-clinical and clinical module in Digestive System (GIT271) for the MBChB2 programme.
2015	Secundus for the pre-clinical and clinical module in Haematological System (371) for the MBChB3 programme.
2016-present	Chairperson for the pre-clinical and clinical module in Haematological System (371) for the MBChB3 programme.

2017-present	Secundus for Form and Function module in the MB,ChB Curriculum Renewal
2019-present	Member of Centre for Cardio-Metabolic Research in Africa (CARMA) Management Committee
2019 - present	Member of Biomedical Sciences Management Committee
2020	Member of Good Laboratory Practice (GLP) Task Team
2020	Member of Faculty Board of Medicine and Health Sciences for a 3 year term starting from 1 July 2020

Research Evaluation and Rating

2007-2012 Y2-Rated Researcher by National Research Foundation (NRF). A researcher in this group is recognized by reviewers (locally and internationally) as having the potential to establish him/herself as a researcher. The rating system recognizes researchers who produce quality research outputs and remain internationally competitive.

Research Outputs

Papers Published

1. Moolman, J.A., Genade, S., Tromp, E., Lochner, A. Ischaemic preconditioning: interaction with anti-adrenergic interventions. *J Mol Cell Cardiol* 27(6): A161, June **1995 (abstract)**
2. Lochner, A., Mouton, R., Tromp, E. "Cross-talk" between second messengers during myocardial ischaemia and reperfusion. *J Mol Cell Cardiol* 27(6), June **1995 (abstract)**
3. Lochner, A., Pentz, A., Williams, K., Tromp, E., Harper, I.S. Substrate effects on sarcolemmal permeability in the normoxic and hypoxic perfused rat heart. *Basic Res Cardiol* 91: 64-78, **1996. (cited 6)**
4. Moolman, J.A., Genade, S., Tromp, E., Lochner, A. No evidence for ischaemic preconditioning by alpha₁-adrenergic signal transduction pathway or protein kinase C in the isolated rat heart. *Cardiovasc Drugs and Therapy* 10: 125-136, **1996. (cited 26)**
5. Moolman, J.A., Genade, S., Tromp, E., Lochner, A. A comparison between ischaemic preconditioning and anti-adrenergic interventions: cAMP, energy metabolism and functional recovery. *Basic Res Cardiol* 91: 219-233, **1996. (cited 12)**
6. Lochner, A., Tromp, E., Mouton, R. Signal transduction in myocardial ischaemia and reperfusion. *Mol Cell Biochem.*, 160/161: 129-136, **1996. (cited 4)**
7. Moolman, J.A., Genade, S., Tromp, E., Opie, L.H., Lochner, A. Ischaemic preconditioning does not protect hypertrophic myocardium against ischaemia. *SAMJ* 87 (Supplement 3): C151-156, **1997 (cited 21)**
8. Lochner, A., Genade, S., Tromp, E., Opie, L.H., Moolman, J.A., Thomas, S., Podzuweit, T. Reduction of cAMP by ischaemic preconditioning (IP): upstream and downstream mechanisms. *J Mol Cell Cardiol* 29:A66, **1997**
9. Genade, S., Tromp, E., Lochner, R.C., Lochner, A. Effects of halothane on postcardioplegic functional recovery: Role of cardioplegic solution. *SAMJ* 88 (Suppl. 2):C96-C98, **1998**
10. Lochner, A., Genade, S., Tromp, E., Theron, S., Trollip, G. Postcardioplegic myocardial recovery: Effects of halothane, nifedipine, HOE 694 and quinacrine. *Cardiovasc Drugs Ther.* 12: 267-277, **1998 (cited 8; Impact factor = 3.098)**
11. Lochner, A., Genade, S., Tromp, E., Page, C., Moolman, J.A., Thomas, S., Podzuweit, T. Role of cyclic nucleotide phosphodiesterases in ischaemic preconditioning. *Mol Cell Biochem*, 186: 169-175, **1998 (cited 42; Impact factor = 2.168)**

12. Lochner, A., Genade, S., Tromp, E., Podzuweit, T., Moolman, J.A. Ischemic preconditioning and the beta-adrenergic signal transduction pathway. *Circulation* **1999**; 100: 958-966 (cited 135; Impact factor = 14.429)
13. Lochner A, Marais E, Genade S, Moolman JA. Nitric oxide: a trigger for classic preconditioning. *Am J Physiol* **2000**; 279: H2752 – H2765 (cited 156; Impact factor = 3.710)
14. Huisamen B., Marais E, Genade S, Lochner A. Serial changes in myocardial beta-adrenergic signalling system in two models of non-insulin dependent diabetes mellitus. *Mol Cell Biochem* **2001**; 219(1-2): 73-82. (cited 19; Impact factor = 2.168)
15. Marais E, Genade S, Huisamen B, Strijdom JG, Moolman JA, Lochner A. Activation of p38 MAPK induced by a multi-cycle ischaemic preconditioning protocol is associated with attenuated p38 MAPK activity during sustained ischaemia and reperfusion. *J Mol Cell Cardiol* **2001**; 33: 769-778 (cited 112; Impact factor = 5.499)
16. Marais, E., Genade, S., Strijdom, J.G., Moolman, J.A., Lochner, A. p38 MAPK activation triggers pharmacologically-induced beta-adrenergic preconditioning, but not ischaemic preconditioning. *J Mol Cell Cardiol* **2001**; 33: 2157-77 (cited 34; Impact factor = 5.499)
17. Lochner, A., Marais, E., du Toit, E.F., Moolman, J.A. Nitric oxide triggers classic ischaemic preconditioning. *Ann NY Acad Sci* **2002**; 962 (34): 402-414 (cited 85; Impact factor = 2.847).
18. Lochner, A., Genade, S., Hattingh, S., Marais, E., Huisamen, B., Moolman, J.A. Comparison between ischaemic and anisomycin-induced preconditioning: role of p38 MAPK. *J Cardiovasc Drugs & Therapy* **2003**; 17(3): 217-230 (cited 42; Impact factor = 3.098)
19. Marais, E., Genade, S., Salie R., Huisamen B., Maritz S., J., Moolman, J.A., Lochner, A. The temporal relationship between p38 MAPK and HSP27 activation in pharmacological and ischaemic preconditioning. *Basic Res Cardiol* **2005**; 100: 35-47 (cited 56; Impact factor = 6.128)
20. Moolman, J.A., Hartley S., Van Wyk, J., Marais, E., Lochner, A. Inhibition of myocardial apoptosis by ischaemic and beta-adrenergic preconditioning is dependent on p38 MAPK. *Cardiovasc Drugs Ther.* **2006** Feb;20(1):13-25 (cited 52; Impact factor = 3.098)
21. Marais, E., Genade, S., Lochner, A. CREB Activation and Ischaemic Preconditioning. *Cardiovasc Drugs Ther.* **2008** Feb;22(1):3-17 (cited 37; Impact factor = 3.098)
22. Lochner A, Marais E, Genade S, Huisamen B, du Toit EF, Moolman JA. Protection of the ischaemic heart: investigations into the phenomenon of ischaemic preconditioning: Review Article. *Cardiovasc J Afr.* **2009** Jan-Feb;20(1):43-51 (cited 63; Impact factor = 0.848)
23. Huisamen B., Genis A, Marais E, Lochner A. Pre-treatment with a DPP-4 Inhibitor is Infarct Sparing in Hearts from Obese, Pre-diabetic Rats. *Cardiovasc Drugs Ther* **2011**; 25:13–20 (cited 130; Impact factor = 3.130)
24. Maarman G, Marais E, Lochner A, du Toit EF. Effect of Chronic CPT-1 Inhibition on Myocardial Susceptibility to Ischemic-Reperfusion Injury in a Model of Diet-Induced Obesity. *Cardiovasc Drugs Ther* **2012**; 26 (3): 205-216, doi:10.1007/s10557-012-6377-1 (Editorial to this article: *Cardiovasc Drugs Ther* 2012, DOI 10.1007/s10557-012-6383-3) (cited 26; Impact factor = 3.130)
25. Govender J, Loos B, Marais E, Engelbrecht A-M. Mitochondrial catastrophe during doxorubicin-induced cardiotoxicity: A review of the protective role of melatonin. *Journal of Pineal Research*, **2014**; 57:367–380, Doi:10.1111/jpi.12176. (cited 81; Impact factor = 7.812)
26. Van Vuuren D, Marais, E., Genade, S., Lochner, A. The differential effects of FTY720 on functional recovery and infarct size following myocardial ischaemia/reperfusion. *Cardiovasc J Afr* **2016**; 27: 375–386, DOI: 10.5830/CVJA-2016-039. (cited 4; Impact factor = 1.022)
27. Webster I., Salie R., Marais E., Fan W-J Maarman G., Huisamen B., Lochner A. Myocardial susceptibility to ischaemia/reperfusion injury on obesity: a re-evaluation of the effects of age. *BMC Physiology* **2017**; 17:3 DOI 10.1186/s12899-017-0030-y. (cited 1; Impact factor = 0.965)

28. Lochner A, Marais E, Huisamen B. Melatonin and cardioprotection against ischaemia/reperfusion injury: what's new? *J Pineal Res.* **2018**;e12490; DOI - 10.1111/jpi.12490 (cited 31; Impact factor = 7.812)
29. Govender J, Loos B, Marais E, Engelbrecht A-M. Melatonin improves cardiac and mitochondrial function during doxorubicin-induced cardiotoxicity: A possible role for peroxisome proliferator-activated receptor gamma coactivator 1-alpha and sirtuin activity? *Toxicology and Applied Pharmacology.* **2018**;358, 86-101 doi:10.1016/j.taap.2018.06.031 (cited 14; Impact factor = 3.75)
30. Salie R., Alsahin A.K.H., Marais E, Lochner A. Cardioprotective effects of Beta3-Adrenergic Receptor (β 3-AR) pre-, per- and post-treatment in ischaemia-reperfusion, *Cardiovascular Drugs and Therapy*, **2019**; 1 -15; DOI 10.1007/s10557-019-06861-5 (cited 1; Impact factor = 4.181)
31. Lochner A, Genade S, Genis A, Marais E, Salie R. Long-chain free fatty acids inhibit ischaemic preconditioning of the isolated rat heart. *Molecular and Cellular Biochemistry*, June 2020. <https://doi.org/10.1007/s11010-020-03812-9>

Book Chapters Published

1. Lochner, A., Marais E., Genade, S., Huisamen B., Strijdom, J.G., Moolman, J.A. Ischaemic and pharmacological preconditioning is associated with attenuation of p38 MAPK activation during sustained ischaemia and reperfusion. In: *Myocardial ischaemia and Preconditioning*. Edit N S Dhalla *et al.* Kluwer Academic Publishers, Boston, USA 2002: 249-273.
2. Moolman, J.A., Marais E., Genade, S., Syanda Makaula, S., Lochner, A. The Role of the Beta-Adrenergic Signal Transduction Pathway in Myocardial Protection. In: *Signal transduction in health and disease*. Ed A&M Srivastava; Springer Verlag, Chapter 4, 2008: 67-87.

Published Abstracts

1. Lochner, A., Genade, S., Tromp E., Moolman, JA., Thomas, S., Podzuweit, T. Beta-adrenergic signal transduction in the ischaemic preconditioned heart. FEBS: Febs Special Meeting, Amsterdam 1997, abstracts P2-077
2. Lochner, A., Genade, S., Tromp E., Moolman, JA., Thomas, S., Podzuweit, T. Reduction of cAMP by ischaemic preconditioning (IP): upstream and downstream mechanisms. *J Mol Cell Cardiol*, XVII European Section meeting of the International Society for Heart Research, Paris 1997, 29; A66.
3. Moolman, J.A., Tromp E., Genade, S., Lochner, A. Role of cGMP in eliciting ischaemic preconditioning (PC). *J Mol Cell Cardiol: International Society of Heart Research, European Section, Rhodes 1998, 30; A20.*
4. Marais E., Genade, S., Moolman, JA., Lochner, A. β -adrenergic stimulation before sustained ischaemia mimics preconditioning (PC). *J Mol Cell Cardiol: XX European Section meeting of the International Society for Heart Research, Maastricht, The Netherlands 1999, 31; Fr77.*
5. Genade, S., Moolman, JA., Marais E., Lochner, A. Ischaemic preconditioning (PC): Are the opioids involved? *J Mol Cell Cardiol*, XX European Section meeting of the International Society for Heart Research, Maastricht, The Netherlands 1999, 31; Fr78.
6. Van Rooyen, J., Marais E., Benadé, A.J.S. The effect of type of diet and EPA supplementation on lipoprotein profile. *J Mol Cell Cardiol*, XX European Section meeting of the International Society for Heart Research, Maastricht, The Netherlands 1999, 31; Sa70.
7. Moolman JA, Tromp E, Genade S, Lochner A. Nitric oxide is a trigger for classic preconditioning in the isolated rat heart. *Eur Heart J. XXII Congress of European Society of Cardiology, Amsterdam Aug 2000: 21 (Abstr suppl): 476*

8. Lochner, A., Marais, E., Genade, S., Moolman, JA. Beta-adrenergic receptor-induced protection of the ischaemic myocardium: a putative role for p38 MAPK. J Mol Cell Cardiol, 17th World Congress of the International Society for Heart Research, Winnipeg, Canada, 2001, 33; A70.
9. Moolman, JA., Marais, E., Genade, S., Bailey L., Lochner, A. Beta-adrenergic mediated attenuation of p38 MAPK may be involved in the protective effect of preconditioning. Euro Heart J, The 23 Annual Congress of the European Society for Cardiology, Stockholm, Sweden, Sep 2001: 22 (Abstr Suppl): P296.
10. Marais, E., Genade, S., Moolman, JA., Lochner, A. Is Activation of p38 MAPK a trigger for ischaemic preconditioning? European Heart Journal: Journal of the European Society of Cardiology, The congress of the European Society of Cardiology, Berlin, Germany, 2002, 23; (Abstr Suppl): P244.
11. Marais E, van Wyk J., Moolman JA, Lochner, A. Preconditioning-induced cardioprotection: The role of cyclic AMP response element binding protein, CREB, activation. Cardiovascular J of South Africa, SA Heart Conference, Cape Town, 2003: 272.
12. Marais, E., Van Wyk J., Moolman, JA., Lochner, A. Temporal relationship between p38 MAPK and HSP27 activation in ischaemic preconditioning. Basic Res Cardiol, Heart Failure/ISHR-ES Meeting, Strassbourg, France, 2003; 98:1
13. Moolman, JA., Marais, E., Van Wyk J., Lochner, A. Ischaemic preconditioning activates HSP27 in cytosolic, mitochondrial and cell membrane fractions of the myocardium. European Heart J, European Society of Cardiology, Vienna, 2003, 24: 717.
14. Huisamen B, Van Wyk J, Marais E, Lochner A. Apoptosis in Type 2 diabetic heart. J of Endocrinology, Metabolism and Diabetes of South Africa, Champagne Castle Sports Resort, Champagne Castle, South Africa, 2003:36.
15. Lochner, A., Marais, E., Genade, S. Events downstream of p38 MAPK in ischaemic preconditioning : HSP27 and CREB. Cardiovascular J of South Africa, International Society for Heart Research, Satellite meeting on "Cellular injury in ischaemia", Kruger National Park, South Africa, 2004: 4-5.
16. Lochner, A., Marais, E., Genade, S., Moolman, JA. cAMP response element binding protein (CREB) activation : a trigger for ischaemic preconditioning. J Mol Cell Cardiol, International Society for Heart Research: European Section, Tromso, Norway, 2005, 38: (6): 1042.
17. Marais E, Genade, S., Lochner, A. Epac (exchange protein directly activated by cyclic AMP) mediated cardioprotection via ERK. 9th Annual South African Heart Association General Meeting Wild Coast Sun, Eastern Cape, Cardiovasc J Africa, 2008, 19 (5), S21.
18. Marais E, Ndlovu Z., Lochner, A. Selective Epac modulation mediates cardioprotection during ischaemia/reperfusion. 15th Annual South African Heart Association Congress, Durban, SA Heart Journal, Spring 2014 Vol 11, No 4, p189. DOI: <https://doi.org/10.24170/11-4-1741>
19. Huisamen B, Genis A, Marais E, Strijdom H. DPP-4 inhibition is cardioprotective and restores pancreatic function in obese, insulin resistant rats. Cardiovascular research 2014 vol 103, S93. <https://europepmc.org/abstract/med/25020888>
20. Huisamen B., Van Vuuren M., Espach Y., Marais E, Lochner A. Is low ATM protein responsible for myocardial insulin resistance associated with obesity? Frontiers in CardioVascular Biology, Cardiovascular Research July 2016 Vol. 111, pp. S88-S89 , DOI: 10.1093/cvr/cvw147
21. Ndlovu Z, Strijdom H, Lochner A, Marais E. Cardioprotection in hearts from obese rats is mediated via an Exchange protein directly activated by cyclic AMP (Epac) - ERK pathway. 18th Annual South African Heart Association Congress, Sandton Convention Centre, SA Heart Journal, 2017 Vol 14, No 4, p247.
22. Ndlovu Z, Strijdom H, Lochner A, Marais E. Vascular alterations in diet-induced obese rats: role of exchange protein directly activated by cyclic AMP (Epac). 15th Annual Society for Heart and Vascular Metabolism meeting, Weimar ,Germany, Sep 2017. P2.18

23. B Huisamen, M Van Vuuren, S Smit, S Kotzé, J Layman, S Windvogel, E Marais, A Lochner. Effects Of A Green Aspalathus Linearis Extract On Obesity-Related Co-Morbidities, 17th Annual Society for Heart and Vascular Metabolism meeting, Amsterdam, The Netherlands, 23-26 June 2019

Oral and Poster Presentations at International Conferences

1. Benadé, A.J.S., Van Rooyen, J., Tromp, E. The influence of diet on the metabolism of GLA and EPA in African Vervet monkeys. 3rd International Congress on Essential Fatty Acids and Eicosanoids. Adelaide, Australia, 1992
2. Moolman, J.A., Genade, S., Tromp, E., Lochner, A. Ischaemic preconditioning: interaction with anti-adrenergic interventions. XV World Congress of the International Society for Heart Research, Prague, 1995
3. Lochner, A., Mouton, R., Tromp, E. "Cross-talk" between second messengers during myocardial ischaemia and reperfusion. XV World Congress of the International Society for Heart Research, Prague, 1995
4. Marais E, Genade, S., Bailey L., Keyser AT, Huisamen B, Moolman JA, Lochner, A. Pharmacological attenuation of p38 mitogen activated protein kinase (MAPK) during ischaemia-reperfusion is associated with myocardial protection. Third International Congress of the African Association of Physiological Sciences/Quadrennial Official Regional Congress of the International Union of Physiological Sciences, Pretoria, South Africa, 2000.
5. Strijdom JG, Marais, E., Genade, S., Moolman, JA., Lochner, A. Ischaemic preconditioning and beta-stimulation protect against hypoxia in an isolated, adult cardiomyocyte model. Third International Congress of the African Association of Physiological Sciences/Quadrennial Official Regional Congress of the International Union of Physiological Sciences, Pretoria, South Africa, 2000.
6. Lochner, A., Marais, E., Genade, S., Moolman, JA. Nitric oxide pre-treatment protects against myocardial ischaemia. Third International Congress of the African Association of Physiological Sciences/Quadrennial Official Regional Congress of the International Union of Physiological Sciences, Pretoria, South Africa, 2000.
7. Moolman, JA., Marais, E., Genade, S., Strijdom JG, Huisamen B., Lochner, A. The protective effect of preconditioning (PC) is associated with attenuation of p38 MAPK during ischaemia. Fourth International Meeting Organised by the Working Group on Heart Failure of the European Society of Cardiology, Barcelona, Spain, 2001.
8. Marais, E., Genade, S., Van Wyk J., Huisamen B., Moolman, JA., Lochner, A. Activation of p38 Mitogen Activated Protein Kinase (p38 MAPK) is detrimental to the ischaemic heart. International Immunopharmacology Congress, Sun City, 2001.
9. Lochner A., Marais E. Myocardial protection against ischaemia: role of p38 mitogen activated protein kinase. XXXIV International Congress of Physiological Sciences, Christchurch, 2001.
10. Lochner, A., Marais, E., Van Wyk J., Moolman, JA. The temporal relationship between p38 MAPK and HSP27 activation in ischaemic preconditioning. Scientific conference on the molecular mechanisms of growth, death and regeneration of the myocardium, Snowbird, Utah, USA, 2003.
11. Marais E, Genade, S., Lochner, A. Epac (exchange protein directly activated by cyclic AMP) mediated cardioprotection via ERK. 9th Annual South African Heart Association General Meeting Wild Coast Sun, Eastern Cape, Cardiovasc J Africa, 2008, 19 (5), S21.
12. Marais E, Ndlovu Z., Lochner, A. Selective Epac modulation mediates cardioprotection during ischaemia/reperfusion. 15th Annual South African Heart Association Congress, Durban, SA Heart Journal, Spring 2014 Vol 11, No 4, p189.
13. Huisamen B., Van Vuuren M., Espach Y., Marais E, Lochner A. Is low ATM protein responsible for myocardial insulin resistance associated with obesity? Cardiovascular Research July 2016 Vol. 111, pp. S88-S89 , DOI: 10.1093/cvr/cvw147

14. Ndlovu Z, Strijdom H, Lochner A, Marais E. Cardioprotection in hearts from obese rats is mediated via an Exchange protein directly activated by cyclic AMP (Epac) - ERK pathway. 18th Annual South African Heart Association Congress, Sandton Convention Centre, SA Heart Journal, 2017 Vol 14, No 4, p247.
15. Ndlovu Z, Strijdom H, Lochner A, Marais E. Vascular alterations in diet-induced obese rats: role of exchange protein directly activated by cyclic AMP (Epac). 15th Annual Society for Heart and Vascular Metabolism meeting, Weimar ,Germany, Sep 2017. P2.18
16. B Huisamen, M Van Vuuren, S Smit, S Kotzé, J Layman, S Windvogel, E Marais, A Lochner. Effects Of A Green Aspalathus Linearis Extract On Obesity-Related Co-Morbidities. 17th annual Scientific Sessions (SHVM 2019) of the Society for Heart and Vascular Metabolism – Amsterdam, The Netherlands, 23-26 June 2019.

Oral and Poster Presentations at National Conferences

1. Tromp, E., Mouton, R., Lochner, A. Protein kinase C activity during myocardial ischaemia. Physiology Society of Southern Africa, 1993
2. Tromp, E., Mouton, R., Lochner, A. Communication between second messengers during myocardial ischaemia and reperfusion. 22nd Annual Congress of the Physiology Society of Southern Africa, 1994
3. Lochner, A., Tromp, E., Mouton, R. Cross-talk between alpha₁- and beta-adrenergic signaling pathways during ischaemia and reperfusion. Biannual meeting of the South African Cardiology Society, 1994
4. Lochner, A., Tromp, E., Mouton, R. The effect of ischaemia on second messengers in the heart. Society for Endocrinology, Metabolism and Diabetes in Southern Africa, 1994
5. Tromp, E., Mouton R., Lochner, A. Tweede boodskappers tydens miokardiale isgemie en herperfusie. Akademiese Jaardag, Fakulteit Geneeskunde en Tandheelkunde, Universiteit van Stellenbosch, Tygerberg, 1995
6. Lochner, A., Tromp, E., Genade, S., Moolman, JA. Prekondisionering beskerm die isgemiese miokardium deur inhibisie van die beta-adrenerge respons. Akademiese Jaardag, Fakulteit Geneeskunde en Tandheelkunde, Universiteit van Stellenbosch, Tygerberg, 1995
7. Tromp, E., Hattingh, P.W., Lochner, A. Alpha₁-adrenergic receptor stimulation provides inotropy in beta-and Ca²⁺-blocked isolated rat hearts after cardioplegic arrest. Physiology Society of Southern Africa, 1995
8. Genade, S., Moolman, J.A., Tromp, E., Lochner, A. The hypertrophic myocardium is not protected by ischaemic preconditioning. Physiology Society of Southern Africa, 1995
9. Lochner, A., Tromp, E., Genade, S., Moolman, JA. Ischaemic preconditioning: an anti-adrenergic phenomenon. Physiology Society of Southern Africa, 1996
10. Lochner, A., Tromp, E., Genade, S., Moolman, JA. Preconditioning reduces the beta-adrenergic response to myocardial ischaemia. Biannual meeting of the South African Cardiology Society, 1996
11. Genade, S., Tromp, E., Huisamen, B., Lochner, A. Preconditioning of the myocardium in pathophysiological conditions. Physiology Society of Southern Africa 1997
12. Tromp, E., Genade, S., Huisamen, B., Lochner, A. Ischaemic preconditioning of the myocardium: role for cyclic nucleotides. Physiology Society of Southern Africa 1997
13. Lochner, A., Genade, S., Tromp, E., Trollip, G. Postcardioplegic myocardial recovery: effects of halothane, nifedipine, HOE 694 and quinacrine. Physiology Society of Southern Africa 1997
14. Tromp, E., Genade, S., Moolman, JA., Lochner, A. Herhaalde beta-adrenerge stimulasie beskerm die hart teen daaropvolgende isgemiese beskadiging. 42ste Akademiese Jaardag, Fakulteit Geneeskunde en Tandheelkunde, Universiteit van Stellenbosch, Tygerberg, 1998
15. Tromp, E., Genade, S., Moolman, JA., Lochner, A. Involvement of nitric oxide (NO) in ischaemic preconditioning. Physiology Society of Southern Africa, 1998

16. Moolman, JA., Tromp, E., Genade, S., Lochner, A. Role of the β -adrenergic signal transduction pathway in ischaemic preconditioning. Physiology Society of Southern Africa, 1998
17. Marais E, Moolman JA, Genade, S., Lochner, A. β -adrenergic stimulated protection against ischaemia may be related to activation of p38 mitogen activated protein kinase (MAPK) in the isolated rat heart. 2nd Annual Medical Research Day by AstraZeneca International 1999
18. Marais E, Genade, S., Moolman, JA., Lochner, A. β -adrenerge beskerming teen isgemie mag verband hou met die aktivering van p38 mitogeen geaktiveerde proteien kinase (MAPK). 43ste Akademiese Jaardag, Fakulteit Geneeskunde en Tandheelkunde, Universiteit van Stellenbosch, Tygerberg, 1999
19. Marais E, Moolman JA, Genade, S., Lochner, A. The mechanism of β -adrenergic preconditioning is p38 MAP kinase dependent. 27th Annual Congress of the Physiology Society of Southern Africa, 1999
20. Moolman JA, Bailey L, Mattheyse M, Marais E, Lochner A. The role of stress-activated kinases in myocardial adaptation. 27th Annual Congress of the Physiology Society of Southern Africa, 1999
21. Marais E, Genade, S., Bailey L., Keyser AT, Huisamen B, Moolman JA, Lochner, A. Inhibisie van p38 mitogeen geaktiveerde proteien kinase (p38 MAPK) tydens miokardiale isgemie verbeter meganiese herstel tydens herperfusie. 44ste Akademiese Jaardag, Fakulteit Geneeskunde en Tandheelkunde, Universiteit van Stellenbosch, Tygerberg, 2000
22. Lochner, A. Marais E, Genade, S., Moolman JA. Rol van stikstofoksied in isgemiese prekondisionering. 44ste Akademiese Jaardag, Fakulteit Geneeskunde en Tandheelkunde, Universiteit van Stellenbosch, Tygerberg, 2000.
23. Strijdom J.G., Marais E, Genade, S., Moolman JA, Lochner, A. Beskerming teen isgemie in volwasse, geïsoleerde kardiaale miosiete. 44ste Akademiese Jaardag, Fakulteit Geneeskunde en Tandheelkunde, Universiteit van Stellenbosch, Tygerberg, 2000.
24. Marais E, Genade, S., Bailey L., Keyser AT, Huisamen B, Moolman JA, Lochner, A. Ischaemic preconditioning: A p38 mitogen activated protein kinase (p38 MAPK) mediated event? 1st Congress of the South African Heart Association, Stellenbosch, South Africa, 2000.
25. Strijdom J.G., Marais E, Genade, S., Moolman JA, Lochner, A. Protection against ischaemia in isolated rat adult cardiac myocytes. 1st Congress of the South African Heart Association, Stellenbosch, South Africa, 2000.
26. Moolman JA, Genade, S., Marais E, Strijdom J.G., Huisamen B., Lochner, A. p38 MAP kinase is 'n belangrike mediator van isgemiese beskadiging van die miokardium. 45ste Akademiese Jaardag, Fakulteit Geneeskunde en Tandheelkunde, Universiteit van Stellenbosch, Tygerberg, 2001.
27. Lochner, A., Genade, S., Marais E. Ondersoek na die rol van p38 mitogeen-geaktiveerde proteïenkinase (p38 MAPK) in isgemiese prekondisionering (IP). 46ste Akademiese Jaardag, Fakulteit Geneeskunde en Tandheelkunde, Universiteit van Stellenbosch, Tygerberg, 2002.
28. Marais E, Genade, S., van Wyk J., Moolman JA, Lochner, A. Is p38 mitogen activated protein kinase (MAPK) activation a trigger in ischaemic preconditioning? 5th Annual Medical Research Day by AstraZeneca International, 2002.
29. Hartley S., Genade S., Marais E., Moolman J.A., Lochner A. Attenuation of p38 MAPK activation during myocardial ischaemia/reperfusion (I/R) is associated with a reduction in necrosis and apoptosis. Physiology Society of Southern Africa, Stellenbosch, 2002.
30. Marais E, van Wyk J., Moolman JA, Lochner, A. HSP27 in isgemiese prekondisionering. 47ste Akademiese Jaardag, Fakulteit Geneeskunde en Tandheelkunde, Universiteit van Stellenbosch, Tygerberg, 2003.
31. Marais E, van Wyk J., Moolman JA, Lochner, A. The role of cyclic AMP response element binding protein, CREB, in ischaemia preconditioning. Physiology Society of Southern Africa, 2003.

32. Marais E, Genade, S., Lochner, A. cyclic AMP response element binding protein (CREB) aktivering tydens isgemiese pre kondisionering (IP). 49ste Akademiese Jaardag, Fakulteit Geneeskunde en Tandheelkunde, Universiteit van Stellenbosch, Tygerberg, 2005.
33. Marais E, Engelbrecht P., Genade, S., Lochner, A. Activation of cAMP response element binding protein (CREB): A trigger of ischaemic preconditioning. Physiology Society of Southern Africa, Sport Science Institute, Cape Town, 2005
34. Marais E, Lochner, A. The guanine nucleotide exchange factor Epac (exchange factor directly activated by cAMP) involvement in preconditioning. 50ste Akademiese Jaardag, Fakulteit Geneeskunde en Tandheelkunde, Universiteit van Stellenbosch, Tygerberg, 2006.
35. Marais E, Lochner, A. Altered beta-adrenergic signaling in preconditioning? Physiology Society of Southern Africa, University Of KwaZulu-Natal, Durban, 2006
36. Marais E, Lochner A. EPAC (exchange protein directly activated by cyclic AMP) medieer miokardiale beskerming via ERK. 51ste Akademiese Jaardag, Fakulteit Geneeskunde en Tandheelkunde, Universiteit van Stellenbosch, Tygerberg, 2007.
37. Fan W-J, Marais E, Moolman JA, Lochner A. Dexamethasone protects the heart against ischaemia-reperfusion injury via upregulation of the dual-specificity phosphatase MKP-1. 51ste Akademiese Jaardag, Fakulteit Geneeskunde en Tandheelkunde, Universiteit van Stellenbosch, Tygerberg, 2007.
38. Maarman GJ, du Toit EF, Marais E, Lochner A. Effects of oxfenicine on myocardial function & resistance to ischemia/reperfusion injury in rodent model of the metabolic syndrome. 53ste Akademiese Jaardag, Fakulteit Gesondheidswetenskappe, Universiteit van Stellenbosch, Tygerberg, 2009.
39. Marais E, Genade, S., Lochner, A. Epac (exchange protein directly activated by cyclic AMP) mediated cardioprotection via ERK and PI3K. Physiology Society of Southern Africa, University of Stellenbosch, Tygerberg, 2009.
40. Maarman GJ, du Toit EF, Marais E, Lochner A. Effects of oxfenicine on myocardial function & resistance to ischemia/reperfusion injury in rodent model of the metabolic syndrome. Physiology Society of Southern Africa, University of Stellenbosch, Tygerberg, 2009.
41. Marais E, Lochner A. The role of Epac (exchange protein directly activated by cAMP) in Hypertrophic Heart Disease. Physiology Society of Southern Africa hosted by Walter Sisulu University Eastern Cape, 2010
42. Fortuin M, Marais E, Lochner A. Intracellular signalling in the development of cardiac hypertrophy and susceptibility to ischaemia/reperfusion injury in obesity-induced insulin resistance. Physiology Society of Southern Africa hosted by University Western Cape, 2011.
<http://www.academicjournals.org/sre/contents/2012Cont/4AprConf.htm> ;
http://www.academicjournals.org/journal/SRE/edition/4_April,_2012 ;
http://www.academicjournals.org/article/article1380876218_Poster%20Presentations%20SREConf.pdf
43. Jansen van Rensburg R.O., Marais E. Exchange Protein Directly Activated by cAMP (EPAC) Mediated Cardioprotection: Ischaemia Reperfusion Pre- & Post-treatment. Physiology Society of Southern Africa hosted by University of Stellenbosch, 2012.
44. Adams L.J., Marais E. Optimization of the High Pressure Liquid Chromatography (HPLC) for High Energy Phosphates (HEPs). 57ste Akademiese Jaardag, Fakulteit Geneeskunde en Gesondheidswetenskappe, Universiteit van Stellenbosch, Tygerberg, 2013.
45. Ndlovu Z, Lochner A, Marais E. The cardioprotective potential of Exchange protein directly activated by cyclic AMP (Epac). NRF-DST Internship Programme Research Day at the Cape Peninsula University of Technology, 2015.

46. Salie R., Alsalhin A.K.H., Marais E, Lochner A. Beta-3 adrenergic receptor mediated cardioprotection. 59ste Akademiese Jaardag, Fakulteit Geneeskunde en Gesondheidswetenskappe, Universiteit van Stellenbosch, Tygerberg, 2015.
47. Salie R., Alsalhin A.K.H., Marais E, Lochner A., Beta-3 adrenergic receptor mediated cardioprotection. Physiology Society of Southern Africa hosted by the Departments of Physiology of the University of the Witwatersrand and the University of Johannesburg, 2015
48. Marais E, Mzezewa S, Webster I, Maarman G, Lochner A. Chronic obesity: An observational study of cardiac function and aortic signaling pathways. Physiology Society of Southern Africa hosted by the Departments of Physiology of the University of the Witwatersrand and the University of Johannesburg, 2015
49. Ndlovu Z., Strijdom H., A Lochner A., Marais E. High fat diet-induced obesity: the role of Epac (Exchange protein directly activated by cyclic AMP) in myocardial ischaemia/reperfusion of ex vivo rat hearts. South African Society for Cardiovascular Research (SASCAR) (2016)
50. Marais E, Ndlovu Z., A Lochner A., Strijdom H. The role of Epac (exchange protein directly activated by cAMP) in obesity-induced cardiovascular dysfunction. SA Heart Annual congress (2016)
51. Eldieb N., Bester D., Marais E. The effect of Rooibos treatment on vascular function in obese rat aorta. Physiology Society of South Africa (PSSA) (2016)
52. Ndlovu Z., Strijdom H., A Lochner A., Marais E. High fat diet-induced obesity: the role of Epac (Exchange protein directly activated by cyclic AMP) in myocardial ischaemia/reperfusion of ex vivo rat hearts. Physiology Society of South Africa (PSSA) (2016)
53. Eldieb N., Bester D., Marais E. The effect of Rooibos treatment on vascular function in obese rat aorta. 60th Annual Academic Day, Faculty of Medicine and Health Sciences, Stellenbosch University (2016)
54. Ndlovu Z., Strijdom H., A Lochner A., Marais E. High fat diet-induced obesity: the role of Epac (Exchange protein directly activated by cyclic AMP) in myocardial ischaemia/reperfusion of ex vivo rat hearts. 60th Annual Academic Day, Faculty of Medicine and Health Sciences, Stellenbosch University (2016)
55. Marais E, Ndlovu Z, Lochner A, Strijdom H. Exchange protein directly activated by cyclic AMP (Epac) activation improves vasorelaxation in a nitric oxide synthase (NOS)-dependent manner in both lean and diet-induced obese rats. CoBNeST 2018 | 7-10 October 2018- Spier Estate Stellenbosch, South Africa
56. Pamela Sithelo, Marais E, Lopes J., Strijdom H., Maarman G. Investigating the efficacy and underlying mechanism of cardioprotection afforded by Rooibos (*Aspalathus linearis*) in Angiotensin-II induced cardiomyocyte hypertrophy & apoptosis. Dept of Biomedical Sciences Research Day, Stellenbosch University (2019).
57. Pamela Sithelo, Marais E, Lopes J., Strijdom H., Maarman G. Investigating the efficacy and underlying mechanism of cardioprotection afforded by Rooibos (*Aspalathus linearis*) in Angiotensin-II induced cardiomyocyte hypertrophy & apoptosis. CARMA Quarterly Virtual Research Meeting – 2 July 2020

Organisational activities

- | | |
|------------------|---|
| 2009 | Local Organizing Committee member of the 37th National PSSA Conference |
| 2018 | Member of the scientific committee for the 2018 annual conference of the Physiological Society of Southern Africa (PSSA), which is to be held in October 2018 as part of a multi-society joint meeting – the 1st Conference of Biomedical and Natural Sciences and Therapeutics (CoBNeST) |
| 2015 | Member of organizing committee for South African Society for Cardiovascular Research (SASCAR) workshop on Western blotting technology |
| 2019-2020 | Chairperson for CARMA Launch committee which successfully took place on the 4 th of March 2020. |

Reviewer for Paper Manuscripts

- 2016** Reviewed article for Cardiovascular Drugs and Therapy (Feb 2016) titled: The Impact Of Chronic Glycogen Synthase Kinase-3 Inhibition On Remodeling Of Normal And Pre-Diabetic Rat Hearts, authors: Barbara Huisamen, PhD Tandekile Lubelwana-Hafver, MSc; Dumisile Lumkwana, Msc; Amanda Lochner, PhD, DSc
- 2016** Reviewed article for Scandinavian Cardiovascular Journal (Jul 2016) titled: Adenosine A2A and A2B receptor substantially attenuate ischemia/reperfusion injury in septic rat hearts, authors: Hendrik Busse Diane Bitzinger; Klaus Höcherl; Timo Seyfried; Michael Gruber; Bernhard M. Graf; York Zausig
- 2016** Reviewed article for Cardiovascular Drugs and Therapy (May 2016) titled: Insulin and GSK3 β -inhibition Interferes with the Infarct sparing-effect of Postconditioning, authors: Helgeland, Erik; Risa, Anita; Sandøy, Rune; Askeland, Maren; Breivik, Lars; Jonassen, Anne.
- 2019** Reviewed article for Fundamental & Clinical Pharmacology (Mar 2019) titled: Role of ATP sensitive potassium channel and endothelial nitric oxide synthase in mediating the cardioprotective effect of hemin in isoprenaline induced myocardial infarction, authors: M.M.M. Refaie, R.A. Rifaai, A.M.A. Bayoumi, S Shehata

Reviewer for Grant Proposals and Rating applications

- 2008** Referee in a Bursary application for Master's degree to the NRF by Ms DA McAlister for a project titled "Effect of ROS on Sperm" at Stellenbosch University
- 2008** Reviewer in University Research Funding Application of M. Tech Biomedical Technology student, Ms ET Thamahane for a project titled "The effect of dietary supplementation of red palm oil (RPO) on the cellular Reperfusion Injury Salvage Kinase pathway in isolated perfused rat hearts subjected to ischemia and reperfusion", on behalf of the Cape Peninsula University of Technology, Faculty of Health and Wellness Sciences.
- 2009** Reviewed application for ethical clearance for the use of animals requested by Subcommittee B of the Research Committee, Stellenbosch University: Titled "A Skeletal Muscle Injury Model For Mice" by Dr F Macaluso, Department of Physiological Sciences, Stellenbosch University, March 2009
- 2010** Reviewed application for ethical clearance for the use of animals requested by Subcommittee B of the Research Committee, Stellenbosch University: Titled "Comparison of two NSAID treatment regimes for contusion injury: a study in rats" by Dr Carine Smith, Department of Physiological Sciences, Stellenbosch University, October 2009
- 2011** Reviewed funding application for a D. Tech Biomedical Technology student, Mrs ETM Thamahane on the project titled "Effect of rooibos and red palm oil on oxidative stress induced cardiomyopathy and ischaemia-reperfusion injury", from the Faculty of Health and Wellness Sciences at the Cape Peninsula University of Technology.
- 2011** Reviewed funding application for a MTech Biomedical Technology student, Ms T Olivier on the project titled "Effects of dietary kolaviron supplementation on oxidative stress and associated pathology", from the Faculty of Health and Wellness Sciences at the Cape Peninsula University of Technology.
- 2014** Reviewer for five MRC self-initiated research grant applications:
- | | | |
|-----------|------------------------------------|---|
| Mels, C. | North-West University South Africa | Urinary protein signatures in participants with increased arterial stiffness and salt sensitivity – African-PREDICT |
| Smith, W. | North-West University South Africa | Exploring the link between markers of extracellular matrix remodeling and blood pressure, arterial |

Schutte, R	North-West University	stiffness, endothelial function and subclinical target organ damage in a bi-ethnic cohort from South Africa The prognostic significance of renin and aldosterone in Africans: the Prospective Urban Rural Epidemiology (PURE) study
Kalla, A.A.	University of Cape Town - Faculty of Health Sciences	Assessment of Vascular and Cardiac Structure and Function in Active and Quiescent Forms of Takayasu's Arteritis, Systemic Lupus Erythematosus and Rheumatoid Arthritis
Sturrock, E	University of Cape Town - Faculty of Health Sciences	Pharmacological role of inhibitor-induced dimerisation in the renin-angiotensin system

2018 Assisted South Africa's National Research Foundation (NRF) in evaluating the quality of the research outputs and standing of Dr R Johnson

2019 Reviewer of application of Dr R Salie for funding in NRF Competitive Support for Unrated Researchers (CSUR) Programme

2019 Reviewer of application of Dr C Pheiffer for funding in NRF Competitive Support for Unrated Researchers (CSUR) Programme

2020 Reviewer of three Doctoral applications and two Extension-doctoral applications for NRF bursaries

Reviewer for Conference Abstracts

2018 Member of the scientific committee and abstract reviewer for the 2018 annual conference of the Physiological Society of Southern Africa (PSSA), which is to be held in October 2018 as part of a multi-society joint meeting – the 1st Conference of Biomedical and Natural Sciences and Therapeutics (CoBNeST)

Examiner for courses, theses and dissertations

2006 External examiner for a MSc (Med) student, Mr SJ Somers on the project titled "Role of nuclear factor kappa-B in TNFalpha – induced cytoprotection", from the Faculty of Health Sciences at the University of Cape Town .

2010 External examiner for a MTech Biomedical Technology student, Wongama Given Pantsi on the project titled "The effect of dietary rooibos tea supplementation on cardiac function after an episode of oxidative stress in isolated rat heart", from the Faculty of Health and Wellness Sciences at the Cape Peninsula University of Technology.

2010 Internal examiner for a MSc student, Mashudu Mudau on the project titled "Endothelial Dysfunction In Cardiac Microvascular Endothelial Cells: An Investigation Into Cellular Mechanisms", from the Faculty of Health Sciences at the University of Stellenbosch.

2012 Internal examiner for a PhD student, Me Margareta de Vos (14308-231-2004) on the project titled: "Identification Of Mechanisms Regulating The Intracellular Concentration Of Rifampicin In Mycobacterium Tuberculosis", from the Faculty of Health Sciences at the University of Stellenbosch.

2013 Internal examiner for a PhD student, Me Gina Leisching on the project titled:" The manipulation of the autophagic pathway sensitises cervical cancer cells to cisplatin treatment", from Physiological Sciences at University of Stellenbosch.

2014 Internal examiner for a MSc student, Me L Ehlers (14839911-2006) on the project titled "Investigation of the underlying molecular mechanisms of immune modulation by contraceptive Medroxyprogesterone acetate (MPA)". Faculty of Health Sciences at the University of

Stellenbosch.

- 2014** External examiner for a MTech Biomedical Technology student, Ms Naledi Gape Nyepetsi (212288601) on the project titled “Dietary *Garcinia kola* supplementation protects the myocardium from ischaemia-reperfusion induced oxidative stress”, from the Faculty of Health and Wellness Sciences at the Cape Peninsula University of Technology.
- 2014** Internal examiner for a PhD student, Mr J Fan on the project titled:” A profile of kinase activation in relation to recovery of the hearts of obese pre-diabetic rats subjected to ischaemia/reperfusion”, from the Faculty of Health Sciences at the University of Stellenbosch
- 2015** Internal eksaminator vir MSc in Geneeskundige Wetenskappe (Geneeskundige Fisiologie) kandidaat me R Kaskar (15381536-2008).
- 2016** Internal examiner for a MSc student Ms Emilene Breedts on: “An evaluation of Trimetazidine as a therapeutic intervention in a newly established ex vivo mouse model of acute heart failure”, from Physiological Sciences at University of Stellenbosch
- 2016** External examiner for MSc(Med) in Physiology student Ms Hala Araibi: “The Role of the Arterial Glycocalyx in Sphingosine-1- Phosphate (S1P) Induced Cardioprotection in the Isolated Heart of the Wistar Rat, Faculty Of Health Sciences, University Of Cape Town
- 2016** Internal examiner for a PhD student, Ms Cara-Lesley Bartlett on the project titled: “The association between tissue non-specific alkaline phosphatase expression and differentiation of mesenchymal stromal cells” from Internal Medicine, Faculty of Health Sciences at the University of Stellenbosch.
- 2016** Internal examiner for a PhD student, Mr P.V. Dlodla on the project titled: “Compounds specific to *Aspalathus linearis* protect the diabetic heart against oxidative stress: a mechanistic study” from the Faculty of Health Sciences at the University of Stellenbosch.
- 2018** Internal examiner for a MSc student Ms Zimvo Maqeda (16735129-2011): “Investigating the Modulating Effects of Afriplex™ GRT Extract on Vascular Function and Antioxidant Status in Obese Wistar Rats”; from the Faculty of Health Sciences at the University of Stellenbosch.
- 2018** External examiner for MSc(Med) in Chemical Pathology student Patrick Diaba-Nuhoho (DBNPAT001): “Reduced-Alcohol Wine In A Rat Model Of Pulmonary Arterial Hypertension”, Faculty Of Health Sciences, University Of Cape Town
- 2018** Internal examiner for a PhD student Ms Marguerite Blignaut (13813412): “An investigation into the role of the ATM protein in the mitochondrial defects associated with the cardiovascular pathology resulting from insulin resistance”, from the Faculty of Health Sciences at the University of Stellenbosch.
- 2019** External examiner for 18 Hons student scripts and presentations from the University Of Kwazulu-Natal, College Of Health Science, School Of Laboratory Medicine And Medical Sciences.
- 2019** Adjudicator for the best Student Intern assignment for MB,ChB VI (evaluated 11 scripts)
- 2020** Internal Moderation of test & examination question papers for Faculty of Sciences, Dept. of Physiological Sciences

Evaluator for Conference Presentations

- 2010** Judge for young scientist poster competition at Physiology Society of Southern Africa hosted by Walter Sisulu University Eastern Cape, 2010
- 2011** Judge for young scientist oral presentation (Wyndham) competition at Physiology Society of Southern Africa hosted by University Western Cape, 2011

2017-2019 Biomedical Research and Innovation Platform (BRIP) invited as judge to the annual Research Symposium held at SAMRC conference centre, Western Cape, South Africa

Media Coverage: Radio

2017 Two interviews on radio: Onderhoude vir RSG gesondheid met aanbieder Mari Hudson: Titels “Wat word van kos as jy dit eet?” en “Bloeding en Hoe herstel ’n wond?”

Current Postgraduate Student Supervision and Co-supervision (Name, degree, title of project, starting date, capacity of supervision)

2017-present Co-supervisor for PhD student, Tracey Lee-Ann Jooste “Identification of novel DNA methylation signatures in the development of cardiac dysfunction” (Supervisor: Rabia Johnson)

2018-present Supervisor for MSc student, Ms P Sithelo, “Underlying mechanisms of Rooibos-induced cardioprotection in apoptosis and hypertrophy: Ascertaining signaling pathways involved and the roles of oxidative stress and mitochondrial efficiency” (Co-supervisors: G. Maarman and J Lopes)

2017-present Co-supervisor for PhD student, Bongikile Skosana “A comprehensive investigation of obesity as an etiology of male infertility in a rat model” (Supervisors: Stefan du Plessis, Gerhard van der Horst, Yapo Guillaume Aboua)

2019-present Co-supervisor for MSc student, Michelle Maartens “Antioxidant supplementation as protective strategy against stem cell dysfunction in type 2 diabetes (Supervisor: Mari van de Vyver)

2020-present Co-supervisor for MSc student, Kauthar Parker “The role of the intestinal immune system and inflammation in the development and treatment of type 2 diabetes” (Supervisor: Sylvia Riedel-van Heerden, Sanet Kotze)

2020-present Co-supervisor for MSc student, Ilze Willemse (Supervisor: Barbara Huisamen)

2020-present Supervisor for Hons student, Dee-Lynn Carolus

2020-present Co-supervisor for MSc student, Atarah Rass (Supervisor: Anna-mart Engelbrecht)

2019-present Co-supervisor for MSc student, Nadia van Niekerk (Supervisors: Stefan du Plessis, Bongi Skosana)

Supervision and Co-supervision of Completed Postgraduate Degrees (Name, degree, title of thesis/dissertation, date of completion, capacity of supervision)

2008-2010 Co-supervisor for M.Sc student, Mr GJ Maarman on a research project titled: “The effect of Acute and Chronic CPT-1 inhibition on myocardial tolerance to ischaemia and mitochondrial function in a rat model of obesity.”

2011 Supervisor for Hons student, Ms M Fortuin on a research project titled: “Intracellular signalling in the development of cardiac hypertrophy and susceptibility to ischaemia/reperfusion injury in obesity-induced insulin resistance”.

2012 Supervisor for Hons student, Mr RO Jansen van Rensburg on a research project titled: “Exchange Protein Directly Activated by cAMP (EPAC) Mediated Cardioprotection: Ischaemia Reperfusion Pre- & Post-treatment.”

2013	Supervisor for Hons student, Mr LJ Adams on a research project titled: "Optimization of High Pressure Liquid Chromatography (HPLC) for High Energy Phosphates (HEPs)".
2013-2015	Co-supervisor for M.Sc student, Dr A Assalhin on a research project titled: "The role of the β -adrenergic receptor in cardioprotection".
2013-2016	Co-supervisor for PhD student, Me Jenelle Yogeshi Govender on a research project titled: "Mitochondrial catastrophe during doxorubicin-induced cardiotoxicity: An evaluation of the protective role of melatonin." from Physiological Sciences at University of Stellenbosch.
2014	Mentor for Intern, Mr Z Ndlovu, as part of DST-NRF Internship Programme 2014/2015
2014	Supervisor for Hons student, Ms S Mzezewa on a research project titled: "Epac's Role On Normal And Obesity Induced Cardiovasculature".
2015	Supervisor for BScHons student, Ms R. Allanson. "The effect of acute administration of Rooibos tea on aortic function of obese rats".
2015-2016	Supervisor for MSc student, Dr N Eldieb. "The treatment effect of Rooibos on vascular function and signalling pathways of aortas from diet induced obese rats." (Co-supervisor: Dirk Bester)
2017	Mentor for Intern, Ms P Sithelo, as part of DST-NRF Internship Programme 2017/2018
2016-2019	Co-supervisor for PhD student, Sybrand Smit. "The cardioprotective abilities of green rooibos tea and an investigation into the correlating mechanisms involved." (Supervisor: B Huisamen)
2019	Supervisor for BScHons student, Ms M Elliott. "Obesity and Endothelial Dysfunction: The Effect of Free Fatty Acids on Aortic Endothelial Cells".
2015-2020	Supervisor for PhD student, Mr Z Ndlovu.. "Epac's (exchange protein directly activated by cAMP) role in obesity-induced cardiovascular diseases".
2016-2020	Co-supervisor for PhD student, Charlize White. "Protein phosphorylation in ischaemia and reperfusion of the heart: A focus on protein phosphatase 2A" (Supervisor: D v Vuuren)
2017-2020	Co-supervisor for MSc student, Dawn Mahlangu "Investigating the Modulating effects of Fermented Rooibos (<i>Aspalathus linearis</i>) and Fermented Honeybush (<i>Cyclopia intermedia</i>) on aortic endothelial function and antioxidant status in Streptozotocin (STZ) – induced diabetic Wistar rats"(Supervisors: S Windvogel, M. Smit-van Schalkwyk)

Teaching Activities (curriculum building, compilation of study guides, modules / classes / courses presented, level, self-developed)

1. Undergraduate Student Teaching:

2003	Lectured to Medical students (MBChB 1) in Muscle Physiology.
2005	Lectured to Medical students (MBChB 1) in Cell Membrane Physiology.
2009	Lectured Hematology in the Physiology AGB278 program.
2010	Lectured Hematology, Neurology and Digestive System in the Physiology BChD2 program Lectured Digestive System in the Physiology AGB278 program
2011	Lectured Hematology, Neurology and Digestive System in the Physiology BChD2 and AGB278 programs Lectured Digestive System in the Physiology MBChB2 program Lectured Neurology in the Physiology MBChB3 program
2011-2017	Internal moderator for Physiology 314 and 344 programs of Dept of Physiological Sciences,

Stellenbosch University.

- 2012-present** Lectured Neurology in the Physiology MBChB3 and AGB278 programs
Lectured Digestive System in the Physiology MBChB2, BChD2 and AGB278 programs
Lectured Hematology in the Physiology MBChB3, BChD2 and AGB278 programs
- 2013-2015** Lectured in Urogenital module of MBChB2 program
- 2012-2014** Chairperson for the pre-clinical and clinical module in Digestive System (GIT271) for the MBChB2 programme.
- 2015-present** Secundus for the pre-clinical and clinical module in Digestive System (GIT271) for the MBChB2 programme.
- 2015-present** Secundus for the pre-clinical and clinical module in Haematological System (371) for the MBChB3 programme.
- 2016-present** Chairperson for the pre-clinical and clinical module in Haematological System (371) for the MBChB3 programme.
- 2017-present** Lectured Digestive System and Haematology in the Fundamentals of Physiology 178 module
- 2017-present** Secundus for Form and Function Module in the MB,ChB Curriculum Renewal

2. Undergraduate Student Supervision:

- 2014** Internal supervisor of Elective module of MBChB IV students (1 student)
- 2015** Internal supervisor of Elective module of MBChB IV students (4 students)
- 2016** Internal supervisor of Elective module of MBChB IV students (5 students);
Internal supervisor of Elective module of MBChB V students (5 students)
- 2017** Internal supervisor of Elective module of MBChB IV students (6 students);
Internal supervisor of Elective module of MBChB V students (5 students)
- 2018** Internal supervisor of Elective module of MBChB IV students (7 students);
Internal supervisor of Elective module of MBChB V students (12 students)
- 2019** Internal supervisor of Elective module of MBChB IV students (5 students);
Internal supervisor of Elective module of MBChB V students (5 students)

3. Postgraduate Student Teaching:

- 1997-2015** Presented practical courses on High Pressure Liquid Chromatography and Western Blotting Techniques to Honours Students.
- 2003-present** Lectured to BSc Honours Students from Medical Physiology, Human Physiology and Medical Biochemistry on Signal Transduction Pathways.
- 2009-2015** Involved in Research Development and Support Division Training Courses: 1-Day Research Overviews in February and August, Lecturing on “ Tips For Research Presentations And Posters”.
- 2010** Lectured to M Clin Epi students on “Preparing an oral presentation (planning, communicating without words, the slide presentation)”
- 2011** Lectured to students from Interdisciplinary Health Sciences on “ Tips For Research Presentations And Posters”.

4. Workshop attended:

- 2007** Education for the humane use and care of Laboratory animals and for promoting quality of experimental results accreditation course, University of Stellenbosch, South Africa – 12 Lectures (1 hour each) – Completed - Attendance
- 2010** Professional Educational Development for Academics (PREDAC), University of Stellenbosch,

- South Africa: Completed – Attendance
- 2012** The question of ‘doctorateness’: An International Workshop for Postgraduate Supervisors and Doctoral Candidates, Centre for Higher and Adult Education, University of Stellenbosch, South Africa: Completed - Attendance
- 2014** Introduction to Teaching in the Health Professions (ITHP) Short Course University of Stellenbosch, South Africa: Completed - Attendance
- 2014** Introduction to Blended Learning Design and Support, University of Stellenbosch, South Africa: Completed - NQF level: 7 and Credits: 6
- 2016-2018** SAVC (South African Veterinary Council) Authorization to perform research as laboratory animal technologist
- 2016** Publishing Workshop - International Presenter - Executive Editor BMC-Attendance
- 2016** Workshop for Postgraduate programme coordinators and administrative officers involved in processing postgraduate applications, 19 July 2016 - - Attendance
- 2017** MB,CHB curriculum renewal project workshop 10 – 11 August 2017, Houw Hoek Hotel - Participant
- 2018** Camtasia Studio Workshop, presenter Thys Murray, 30 May 2018 - Attendance
- 2018** Understanding the Policies relevant to the Management of Research Contracts workshop, STIAS, 7 June 2018 - Attendance
- 2019** Blended Brainstorm – Dr JP Bosman (12-6-2019) part of New Curr
- 2019** Podcasting – Darryl Pinetown (3-7-2019) part of Haematology Module
- 2019** Programmatic Assessment Workshop – by Professor Gilly Salmon (Pro Vice-Chancellor: Education Innovation, University of Western Australia) (2 to 4 Dec 2019) part of New Curr
- 2019** Nominated to attend FMHS Leadership Development Programme – Attendance (Sep-Oct 2019)
- 2020** MSc Neuroscience by Coursework and Dissertation Workshop II – collaborate in implementing a new Neuroscience program (coordinated by Chrisna Swart)

Selected Collaborations

- 2015-2016** Supervisor for MSc student, Dr N Eldieb. “The treatment effect of Rooibos on vascular function and signalling pathways of aortas from diet induced obese rats.” (Co-supervisor: Dr Dirk J Bester, Faculty Research Coordinator, Faculty of Health and Wellness Sciences, Cape Peninsula University of Technology)
- 2017-2018** Co-supervisor for PhD student, Tracey Lee-Ann Jooste “Identification of novel DNA methylation signatures in the development of cardiac dysfunction” (Supervisor: Dr Rabia Johnson, Senior Scientist, Biomedical Research and Innovation Platform, South African Medical Research Council)
- 2018-present** Supervisor for MSc student, Ms P Sithelo, “Underlying mechanisms of Rooibos-induced cardioprotection in apoptosis and hypertrophy: Ascertaining signaling pathways involved and the roles of oxidative stress and mitochondrial efficiency” (Co-supervisors: Dr G. Maarman, Research Manager: Desmond Tutu TB Center (DTTC), Department of Pediatrics & Child Health, Faculty of Medicine & Health Sciences, University of Stellenbosch)
- 2019** Assisted with perfusions, planning, training and analysis for MSc Student, Lukas Olivier (supervisor prof Faadiel Essop, Physiological Sciences, Faculty of Science, University of Stellenbosch)

Community Service, Outreach Projects and Membership of Community and Cultural Societies and Committees

- 2000-2005** Participated in the Autumn School (GESOG) held by the Medical School, University of Stellenbosch to specifically reach Grade 12 pupils from traditionally underprivileged schools,

interested in a medical career.

- 2010** Lectured on the Digestive system to teachers from disadvantaged schools in order for them to obtain the Advanced Certificate in Education: Life Sciences coordinated by IMSTUS (Institute for Mathematics and Science Teaching).
- 2011-2018** Lectured on the Neurophysiology and Digestive system to Cuban trained SA MBChB students
- 2011** Examiner for neurophysiology for Prim Exams of FCORL and FCMFOS
- 2013** Examiner for neurophysiology for Prim Exams of Dermatology
- 2014** Mentor for Intern, Mr Z Ndlovu, as part of DST-NRF Internship Programme 2014/2015
- 2017** Mentor for Intern, Ms P Sithelo, as part of DST-NRF Internship Programme 2017/2018
- 2018 - 2019** Organised and Presented a stand with posters, flyers and banner at Career Fair hosted by The Tygerberg Postgraduate Student Council (TPSC) in collaboration with the Golden Key Society, Tygerberg Campus.
- 2020** Examiner for neurophysiology in MChD Part I Physiology

Administrative, Leadership and Management Skills and Activities

- 2011-2017** Internal moderator for Physiology 314 and 344 programs of Dept of Physiological Sciences, Stellenbosch University.
- 2012-2014** Chairperson for the pre-clinical and clinical module in Digestive System (GIT271) for the MBChB2 programme.
- 2013-present** Administrator and coordinator of BScHons program for Division of Medical Physiology
- 2015-present** Secundus for the pre-clinical and clinical module in Digestive System (GIT271) for the MBChB2 programme.
- 2015, 2018** Secundus for the pre-clinical and clinical module in Haematological System (371) for the MBChB3 programme.
- 2016-2017** Chairperson for the pre-clinical and clinical module in Haematological System (371) for the MBChB3 programme.
- 2017-present** Secundus for "Form Follows Function" module in the MB,ChB Curriculum Renewal
- 2019 - present** Member of Centre for Cardio-Metabolic Research in Africa (CARMA) Management Committee
- 2019 - present** Member of Biomedical Sciences Management Committee
- 2020** Member of Good Laboratory Practice (GLP) Task Team
- 2020** Member of Faculty Board of Medicine and Health Sciences for a 3 year term starting from 1 July 2020

REFEREES:

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