

**CURRICULUM VITAE
OF
DR. GERALD JEROME MAARMAN**

PERSONAL INFORMATION

Date of Birth: 24th of April 1984
Home address: Unit 6, Sandylands Apartment Complex, Corner of Langverwacht and Silveroaks, Kuilsriver, 7580 (Cape Town, South Africa).
ID Number: 8404245222084
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EMPLOYMENT HISTORY

2019- present: Lecturer – Division of Medical Physiology (**NRF Y-2 Rated researcher**)
2017-2019: Research Manager - Desmond Tutu TB Centre (DTTC) Stellenbosch University
2014-2016: Postdoctoral research fellow - University of Cape Town.

EDUCATION HISTORY

Ph.D. (Medicine)
Year received: 2011-2014
University of Cape Town
Supervisors: Prof. Sandrine Lecour and Prof. Karen Sliwa

MSc. (Medical Physiology)
Year received: 2010
University of Stellenbosch
Supervisors:

BSc. Hons. (Medical Physiology)
Year received: 2007
University of Stellenbosch
Supervisors: Dr. EF Du toit and Dr. E Marais

BSc. (Functional Human Biology)
Year received: 2007
University of Stellenbosch

Matric (National Certificate, Grade 12)
Year received: 2002
Eersterivier Secondary School

CURRENT RESPONSIBILITIES

UNDERGRADUATE

- 1) I currently lecture cardiovascular physiology, gastro-intestinal tract physiology, skeletal muscle physiology and molecular biology. The students I teach includes MBChB first, second and third years, and second year allied health science students (physiotherapy, dietetics, nursing, and occupational health).
- 2) Deliver tutorials, practicals and assessments of students.
- 3) Implementing administrative duties (marking, reviewing of assessments, reports).

POSTGRADUATE:

1. I lecture to the honours BSc. Med. Sci students on pulmonary arterial hypertension pathophysiology and academic writing. Part of a team of academics who do curriculum planning and renewal.
2. Fulfil administrative duties (marking, reviewing of assessments, reports).
3. Examine MMed students, focussing on cardiovascular physiology.
4. Supervise postgraduate students (Honours BSc, MSc, and PhD).
5. Coordinate our Honours BSc. Program (2020- present).
6. External Examiner for postgraduate dissertations (MSc and PhD), of various universities.
7. Function as an Equality Champion A
8. member of the Dean's Advisory Committee for Transformation (DACT).

STUDENT SUPERVISION

2018- present (graduating March 2021) - (co-supervisor)

Ph.D.

Miss. Melisse Erasmus

Registration: January 2018 - South African Medical Research Council

Anticipated graduation date: December 2020

2018-present (graduating March 2021) - (co-supervisor)

Ph.D.

Miss. Siddiqah George

Registration: January 2015 - University of Cape Town

Anticipated graduation date: December 2020

2019- Present (passed 72%, graduated March 2021) - (co-supervisor)

MSc.

Miss. Pamela Sithelo

Registration: January 2018

University of Stellenbosch

Anticipated graduation date: December 2020

2021 (Main supervisor)

MSc.

Miss. Carmen Payne

Registration: January 2021

University of Stellenbosch

Anticipated graduation date: December 2023

2021 (Main supervisor)

MSc.

Miss Kgatla Thato Mmathapelo

Registration: January 2021

University of Stellenbosch

Anticipated graduation date: December 2024

2021 (Main supervisor)

BSc. Hons.

Dr. Steve Jacobs (Special needs student)

Registration: January 2021

University of Stellenbosch

Anticipated graduation date: December 2021

2021 (Main supervisor)

BSc. Hons.

Miss Cornel Vlok

Registration: January 2021

University of Stellenbosch

Anticipated graduation date: December 2021

2021 (Main supervisor)

BSc. Hons.

Miss Sara Shaboodien

Registration: January 2021

University of Stellenbosch

Anticipated graduation date: December 2021

2015 - (Graduated)

Hons.BSc.Med.Sci. - (co-supervisor)

Miss. Brittany Andrew

Registration: January 2015 - University of Cape Town

Graduated: December 2015

2015 - (Graduated)

Hons.BSc.Med.Sci. - (co-supervisor)

Miss. Prisca Osiki

Registration: January 2015 - University of Cape Town

Graduated: December 2015

RESEARCH PROJECTS AND FUNDING

Project A:

“Investigation of the underlying mechanisms of Rooibos-induced cardioprotection: The roles of mitochondrial metabolism, apoptosis, and hypertrophy signalling”.

Project B:

“Investigating the involvement of mitochondrial protein expression and mitochondrial bioenergetic pathways in the development of pulmonary hypertension in tuberculosis”.

Funding

SA-MRC SIR = R600 000 (three-year period).

SARC grant = R 642 406 (two-year period).

Early Career Research Award – SU, Faculty of Medicine & Health Sciences = R 112 463 (once off).

NRF Equipment Related Travel = R125 000 (once off).

Harry Crossley Project Funding = R31 500 (once off).

Previous Successful Research Grants

NRF incentive funding = R120 000 per annum (two years).

FMHS equipment grant = R784 000 (once off) Divisional research grant = R25 000 (once off).

PVRI research grant = R615 000 (will be processed in 2021).

NRF CSRR – R800 000 p.a. (2021-2023, outcome pending).

PUBLISHED PAPERS

1. **MAARMAN G**, Natural antioxidants as potential therapy, and a promising role for melatonin against pulmonary hypertension, **BOOK CHAPTER**, Springer, Y.-X. Wang, Editor. 2017, DOI: 10.1007/978-3-319-63245-2
2. **MAARMAN G**, **EDITORIAL** to: “Discovery of a Murine Model of Clinical Pulmonary Arterial Hypertension: Mission Impossible?” by Dai and Zhao, *Trends in Cardiovascular Medicine*, 2017. **27**(4): p. 237-238
3. **MAARMAN G**, Schulz R, Sliwa K, Schermuly R, Lecour S, Novel putative pharmacologic therapies to protect the right ventricle in pulmonary hypertension: A review of current literature, *British Journal of Pharmacology*, 2017. **174**(7): p. 497-511.
4. **MAARMAN G**, Blackhurst D, Blauwet L, Thienemann F, Butrous G, Davies N, Sliwa K, Lecour S, Melatonin as a preventive and curative therapy against pulmonary hypertension, *Journal of Pineal Research*, 2015. **59**(3): p. 343-353.
5. **MAARMAN G**, Mendham A, Madlala H, Ojuka E, Reviewing the excessive consumption of fructose-containing dietary sugars: An emerging threat for Africa? *Journal of African Association of Physiological Sciences*, J. Afr. Ass. Physiol, 2016. **4**(2): p. 71-80.
6. **MAARMAN G**, Andrew B, Blackhurst D and Ojuka E, Melatonin protects against uric acid-induced mitochondrial dysfunction, oxidative stress, and triglyceride accumulation in C2C12 myotubes, *Journal of Applied Physiology*, 2017. **122**(4): p. 1003-1010.
7. MADLALA H, **MAARMAN G**, Ojuka E, Fructose-induced production of reactive oxygen species in skeletal muscle: Possible roles of uric acid and transforming growth factor, *Nutrition Reviews*, 2016. **74**(4): p. 259-266.
8. Ojuka E, Bezuidenhout N, George S, **MAARMAN G**, Madlala HP, Mendham A and Osiki P, Measurement of beta oxidation capacity of biological samples by respirometry: A review of principles and substrates, *Am J of Physiol Endocrinol Metab*, 2016. **310**(9): p. E715-E723.
9. Webster I, Salie E, Marais E, **MAARMAN G**, Huisamen B and Lochner A, Myocardial susceptibility to ischaemia/reperfusion in obesity: a re-evaluation of the effects of age, *BMC Physiology*, 2017. **17**(1): p. 3.
10. **MAARMAN G**, Mendham AE, Lamont K and George C, A review of the causal role of fructose-containing sugars in myocardial susceptibility to ischemia/reperfusion injury: Interrogation of current evidence from in vivo and in vitro studies, *Nutrition Research*, 2017. **42**: p. 11-19.
11. **MAARMAN G** and Lamont-Mbawuli K, A review of challenges in South African education and possible ways to improve educational outcome as suggested by decades of research, *Africa Education Review*, <http://dx.doi.org/10.1080/18146627.2017.1321962>, 2017.
12. Kriel JA, Müller-Nedebock K, **MAARMAN G**, Ojuka E and Loos B, Coordinated autophagy modulation overcomes glioblastoma chemoresistance through disruption of mitochondrial bioenergetics, *Nature Scientific Reports*, 10348 (2018), July 2018.

13. Kelly-Laubscher R.F, King J.C, Hacking D, Somers S, Pedretti S, **MAARMAN G** and Lecour S, Preconditioning with sphingosine-1-phosphate requires activation of signal transducer and activator of transcription-3, *Cardiovascular Journal of Africa*; 2014; 25 (3):118-123.
14. **MAARMAN G**, Lecour S, Butrous G, Thienemann F and Sliwa K, A comprehensive review: the evolution of animal models in pulmonary hypertension research; are we there yet? *Pulmonary Circulation*, Vol. 3, No. 4, pp. 739-756, December 2013.
15. **MAARMAN G**, Marais E, Lochner A, Du Toit EF, Effect of Chronic CPT-1 Inhibition on Myocardial Ischemia-Reperfusion Injury (I/R) in a Model of Diet-Induced Obesity, *Cardiovascular Drugs and Therapy*; 3:205-216, 2012.
16. **MAARMAN G**, and Reiter RJ, Melatonin therapy for blunt trauma and strenuous exercise: A mechanism involving cytokines, NFκB, Akt, MAFBX and MURF-1, *Journal of Sports Sciences*, 10.1080/02640414.2018.1424491, 2018.
17. MADLALA H, **MAARMAN G**, Ojuka E, Fructose impairs mitochondrial respiration and substrate utilization in hepatocytes via the enzyme, glutamate oxaloacetate transaminase, *Integrative Food, Nutrition and Metabolism* 5, DOI: 10.15761/IFNM.1000228, December 2018.
18. Nduhirabandi F and **MAARMAN G**, The role of melatonin in heart failure: A promising strategy? *Molecules*, 23(7). pii: E1819. doi: 10.3390/molecules23071819, July 2018.
19. Allwood B and **MAARMAN G**, Kyriakakis C, Doubell A, Post-tuberculosis lung disease and long-term complications in South Africa: A link with pulmonary hypertension and a premise for clinical investigation, Letter to Editor, *South African Medical Journal*, vol.108 n.7, doi.org/10.7196/samj.2018.v108i7.13359, August 2018.
20. Sloom R, **MAARMAN G**, Osman M, Marx F, Variation in HIV prevalence and the population-level effects of antiretroviral treatment for reducing tuberculosis incidence in South Africa, Letter to the Editor, *South African Medical Journal*, 108(8):606. DOI:10.7196/SAMJ.2018.v108i8.13394, July 2018.
21. **MAARMAN G**, Pulmonary arterial hypertension, and the potential roles of metallothioneins: A focused review, *Life Sciences*, 1;214:77-83. doi: 10.1016/j.lfs.2018.10.039, December 2018.
22. **MAARMAN G**, Cardioprotection conferred by rooibos (*Aspalathus linearis*): A mini review to highlight a potential mechanism of action, *South African Journal of Science*, 115 (7/), <https://doi.org/10.17159/sajs.2019/4653>, August 2019.
23. **MAARMAN G**, Ischemia-reperfusion injury, and the roles of excess fructose: The effects on the heart and other organs, **BOOK CHAPTER**, *Elsevier*, August 2019.
24. **MAARMAN G**, The right ventricle in pulmonary hypertension: roles of mitochondrial reactive oxygen species and mitochondria-targeted antioxidants, **BOOK CHAPTER**, *Springer*, August 2019.
25. **MAARMAN G**, Making a case for metallothioneins conferring cardioprotection in pulmonary hypertension, *Medical Hypotheses*, January 2020.
26. Estelle Piwowar-Manning, Jessica Fogel Denni Lennon, Philip Sullivan, Yaw Agyei, Deborah Donnell, Ethan Wilson, Peter Bock, Sian Floyd, Anneen van Deventer, Barry Kosloff, Ayana Moore or Sam Griffith, Alexis Katsis, and **MAARMAN G**, Gert van Zyl, Nomtha Mandla, Rosa Sloom, Helen Ayles, Richard Hayes, Sarah Fidler, Determination of HIV status and identification of incident HIV infections in a large, community-randomized trial: HPTN 071 (PopART), *JAIDS*, February 2020.
27. **MAARMAN G**, A philosophical perspective on pulmonary hypertension: *What is "rare"?* *South African Journal of Science*, February 2020.
28. **MAARMAN G**, J Shaw, B Allwood, Pulmonary Hypertension in majority countries, *Current Opinion in Pulmonary Medicine*, January 2020.
29. **MAARMAN G**, Chafaka G, Sliwa K, (Editorial) World Heart Day: A World Heart Federation communiqué on the future of basic sciences and translational medicine in global cardiovascular research, *American Journal of Physiology-Lung Cellular and Molecular Physiology*, July 2020.
30. Nomtha Fundiswa Bell-Mandla, Rosa Sloom, **MAARMAN G**, Sam Griffith, Ayana Moore, Sian Floyd, Richard Hayes, Sarah Fidler, Helen Ayles, Peter Bock, Improving Retention of Community-recruited Participants in HIV Prevention Research Through Saturday Household Visits; Findings from the HPTN 071 (PopART) Study in South Africa. *BMC Medical Research Methodology* DOI: 10.21203/rs.3.rs-60907/v1.

UNDER PEER REVIEW

1. **MAARMAN G** and Lamont-Mbawuli K, Adolescents in the South African context: the roles of the church, spirituality, and mentorship programmes in promoting motivation to overcome disadvantage, *Journal of Social Development in Africa*, November 2020.
2. **MAARMAN G**, and Lamont-Mbawuli K, Melatonin improves mitochondrial coupling efficiency in myotubes exposed to excess fructose, *Melatonin Research*, November 2020.

IN PREPARATION

1. **MAARMAN G**, RJ. Reiter, Sandrine Lecour and YX. Wang, Interesting effects of melatonin on the mitochondrial respiration of healthy C2C12 myotubes, *Physiology Reports*, November 2020.
2. **MAARMAN G**, Sithelo P, Blignaut M, Windvogel S, Huisamen B, Marais E, Strijdom H, Rooibos (*Aspalathus linearis*) induced cardioprotection is underpinned by cardiac mitochondrial pathways: what is missing and what is the way forward? November 2020.
3. **MAARMAN G**, and Butrous G, The role of the microbiome in pulmonary hypertension: Is melatonin the missing link? November 2020
4. Sithelo P, Lopes J, Strijdom H, Marais E and **MAARMAN G**, Rooibos induced cardioprotection in a H9C2 model of angiotensin-II induced hypertrophy and apoptosis mediated via mitochondrial pathways, November 2020.
5. Position paper from the PVRI working group on Pulmonary Vascular Infections: An imminent longitudinal COVID19 study on the pulmonary consequences, a multicentre study, Kosanovic D, **MAARMAN G**, Pullamsetti, Almodivar S, Butrous G, Magdi Y, and the working group, November 2020.
6. **MAARMAN G** and Lecour S, Time to explore the therapeutic potential of Rooibos (*Aspalathus linearis*) against experimental pulmonary arterial hypertension? *Journal of Herbal Medicine*, April 2021
7. **MAARMAN G** and Lecour S, Melatonin against pulmonary arterial hypertension: is it ready for testing in the patients? *Cardiovascular Journal of Africa*, April 2021.
8. Lamont K, Klipstein-Grobusch K, Ojii D, Pretorius S, **MAARMAN G**, van Niekerk R, Stewart S, Sliwa K, Reliable Equitable Accessible Convenient Health Utilising SMS (REACH US): Dissemination of health information among pregnant women in Soweto, South Africa, *Telemedicine & eHealth*, August 2021.
9. **MAARMAN G**, The link between COVID-19 in South Africa, comorbidities, and long-term consequences like pulmonary hypertension, **BOOK CHAPTER**,

CONFERENCE OUTPUTS (PEER-REVIEWED)

1. **MAARMAN G**, Shaw J, Allwood, Recent developments in clinical PAH research at Tygerberg Hospital, South Africa: preliminary data, PVRI Annual Congress, Peru, April 2020.
2. **MAARMAN G**, Brittany Andrew, D Blackhurst, Ojuka E, Melatonin recues uric acid-induced mitochondrial impairment and oxidative stress in C2C12 myotubes Khütai Austria, 7-13th July 2016.
3. **MAARMAN G**, Brittany Andrew, D Blackhurst, Ojuka E, Uric acid impairs mitochondrial respiration, elevates triglycerides, reduce aconitase activity: Melatonin counteracts these effects, *Experimental Biology*, San Diego California, United States of America, April 2016.
4. **MAARMAN G**, Sliwa K and Lecour S, Characterisation of mitochondrial function in a model of pulmonary arterial hypertension and right ventricular failure, 5th Annual International Mitochondrial Physiology School, Cape Town, South Africa May 2015.
5. Marais E, Huisamen B, **MAARMAN G**, Lochner A, Cardiovascular abnormalities in aged, diet- induced obese rats, to be presented at the Physiology Society of Southern Africa, 35th Annual Congress, Johannesburg South Africa 2015.
6. F. Thienemann, L. Blauwet, R. Burton, K. Tibazarwa, **MAARMAN G**, A. Dzudie, A. O. Mocumbi, K. Sliwa, HIV-associated pulmonary hypertension in a densely populated, peri-urban township in Cape Town, South Africa: clinical presentation and survival, To be presented at the European Society of Cardiology (ESC) Annual meeting in Barcelona Spain, 30th August until 3rd of September 2014.

7. **MAARMAN G**, Blauwet L, Blackhurst D, Sliwa K and Lecour S, Cardioprotective effect of melatonin on cardiac function and oxidative stress in pulmonary arterial hypertension, International Society of Heart Research, Barcelona, Spain, 2014.
 8. **MAARMAN G**, Blauwet L, Sliwa K and Lecour S, Effects of melatonin treatment on cardiac function in a model of pulmonary arterial hypertension, Pan-African Society of Cardiology Congress, Dakar, Senegal, 2013.
 9. **MAARMAN G**, Blauwet L, Lecour S and Sliwa K, Can melatonin improve cardiac function in pulmonary arterial hypertension? European Society of Cardiology (ESC) annual congress, Amsterdam, Netherlands 2013, European Heart Journal 2013; Vol 34(1):476.
 10. **MAARMAN G**, Blauwet L, Sliwa K, Lecour S, The effects of melatonin on cardiac function in a model of pulmonary arterial hypertension, The World Congress on Paediatric Cardiology & Cardiac Surgery 2013, Cape Town, South Africa.
 11. **MAARMAN G**, Du Toit E.F, The effect of a fatty acid oxidation inhibitor (oxfenicine) on myocardial function and –resistance to ischemia/reperfusion injury in a rodent model of the metabolic syndrome, Physiology Society of Southern Africa, 36th Annual Congress, Johannesburg, South Africa 2009.
 12. **MAARMAN G**, Du Toit E.F, The effect of a PPAR-alpha agonist (K111) on myocardial function and resistance to ischemia/reperfusion injury in a rodent model of the metabolic syndrome, Physiology Society of Southern Africa, 35th Annual Congress, Johannesburg South Africa 2008.
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MEMBERSHIP OF PROFESSIONAL ASSOCIATIONS

FACULTY: Pulmonary Vascular Research Institute (PVRI) – Global Taskforce Pulmonary Infections.

MEMBER: South Africa Heart Association (SA-Heart)

MEMBER: American Thoracic Society (ATS)

MEMBER: American College of Chest Physicians (CHEST)

MEMBER: International Society of Heart Research (ISHR)

MEMBER: European Society of Cardiology (ESC)

MEMBER: South African Society of Cardiovascular Research (SASCAR)

MEMBER: Physiological Society of Southern Africa (PSSA)

MEMBER: International Mitochondrial Physiology Society (MiP-Society)

MEMBER: Golden Key International Honour Society

OTHER ACHIEVEMENTS

NRF- RATING 2018 = Y2 RATING

GOOGLE SCHOLAR H-INDEX: 11

SCOPUS H-INDEX: 10

CERTIFICATE: GOOD CLINICAL PRACTICE (GCP)

- CREDE: University of Stellenbosch

CERTIFICATE: HUMAN SUBJECTS PROTECTION (HSP)

- National Institute of Health (NIH) - USA

GOLDEN KEY INTERNATIONAL HONOUR SOCIETY (MEMBERSHIP NO: 13125379)

- University of Cape Town, South Africa

AWARD OF EXCELLENCE

- 7th Mitochondrial Physiology School - Best oral presentation

CLINICAL EXCELLENCE AWARD

- 15th South African Association Heart Congress – Best oral presentation

AWARD OF EXCELLENCE

- For best presenter in the Basic Sciences – University of Stellenbosch (Academic year day)

CERTIFICATE FOR ACCREDITATION OF CARE, USE AND HANDLING OF LABORATORY ANIMALS

- Department of Medicine, University of Cape Town

CERTIFICATE FOR SCIENTIFIC WRITING SKILLS

- Department of Medicine, University of Stellenbosch

CERTIFICATE FOR BASIC COMMUNICATION SKILLS IN XHOSA

- Department of Medicine, University of Cape Town

CERTIFICATE FOR ENGINEER DRAWINGS (N1 AND N2)

- Scimathus/IMSTUS educational programme, University of Stellenbosch

CERTIFICATE FOR TERMINAL/HO BASED CARE

- Western Cape Department of Health/MEC of Health

CERTIFICATE FOR TRAUMA COUNSELLING

- Western Cape Department of Health/MEC of Health

CERTIFICATE FOR BASIC AND INTERMEDIARY FIRST AID

- Western Cape Department of Health/MEC of Health

CERTIFICATE FOR HIV/AIDS PEER COUNSELLING

- Western Cape Department of Health/MEC of Health

REFERENCES

PROF. HANS STRIJDOM

Deputy Director: Centre for Cardio-Metabolic Research in Africa (CARMA).

Acting Head: Division of Medical Physiology, Faculty of Medicine and Health Sciences, Stellenbosch, University.

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PROF. SANDRINE LECOUR

Deputy Director of the Hatter Institute for Cardiovascular Research in Africa (HICRA).

Faculty of Health Sciences, Department of Medicine, University of Cape Town.

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PROF. KAREN SLIWA

Deputy Dean of Research, Department of Medicine, Faculty of Health Sciences, UCT.

President of the World Heart Federation.

Director of the Hatter Institute for Cardiovascular Research in Africa (HICRA).

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