

# ABBREVIATED RESEARCH-FOCUSED CURRICULUM VITAE:

## PROF HANS STRIJDOM

### PERSONAL INFORMATION:

- Associate Professor: Division of Medical Physiology, Faculty of Medicine and Health Sciences, Stellenbosch University
- Acting Head: Division of Medical Physiology, Faculty of Medicine and Health Sciences, Stellenbosch University (2019-2020)
- Head: Cardiovascular Research Group, Division of Medical Physiology, Faculty of Medicine and Health Sciences, Stellenbosch University
- Co-Director: Centre for Cardio-metabolic Research in Africa (CARMA), Stellenbosch University

### RESEARCH

#### RESEARCH: EXPERTISE, INTERESTS AND FOCUS AREAS

- Cardiovascular physiology, pathophysiology, risk factors and disease
- Vascular biology, endothelial function and dysfunction
- Emerging cardiovascular risk factors (HIV-infection, antiretroviral treatment, air pollution)
- Experienced researcher in *in vitro*, animal and human / epidemiological studies
- Experienced in research project management

#### RESEARCH: PERSONAL DEVELOPMENT, INNOVATION AND GRANT AWARDS

- Development and establishment of an isolation technique for rat heart cardiac myocytes in the Division of Medical Physiology: 2000-2006
- Introduction of rat heart and aortic endothelial cell culture model in the Division of Medical Physiology: 2001-2004
- Establishment of protocols to evaluate the production of various intracellular free radicals and reactive oxygen species in cardiac myocytes and endothelial cells via FACS analysis: 2004
- Established the Endothelial Cell Research Group: 2007
- Total research grant income (as lead or co-lead) since 2004: ~R 13-million.

#### RESEARCH: LEADERSHIP, MANAGEMENT, SERVICE AND RECOGNITION

- Head: Cardiovascular Research Group, Division of Medical Physiology, Faculty of Medicine and Health Sciences: 2006 - present
- Co-founder and Co-Director: Centre for Cardio-metabolic Research in Africa (CARMA), Faculty of Medicine and Health Sciences: 2018 - present
- International Coordinator and Principal Investigator: EndoAfrica Research Consortium (RSA, Belgium and Austria): 2014-2020
- Chair of Annual Research Day Organizing Committee, Faculty of Medicine and Health Sciences: 2007 and 2008
- Chair of the local organizing committee of the Annual Congress of the Physiology Society of Southern Africa (PSSA); Stellenbosch: September 2009
- Vice-President of the PSSA Council: 2009
- Member of PSSA Council: 2009-2013 and Secretary / Treasurer: 2010-2013

- Co-Founder of the Southern Africa Society for Cardiovascular Research (SASCAR) and member of Executive Committee: 2009-2014
- Member of Subcommittee C (Research Committee), Faculty of Medicine and Health Sciences: 2014-2015 and 2019-2020
- Guest Associate Editor and Research Topic Editor for *Frontiers in Physiology*: 2016 – 2019
- Editor for *PLOS One*: 2016
- Invited chair of sessions at several meetings of the Physiology Society of Southern Africa (PSSA) and SA Heart Association since 2004
- Chair of scientific session at the International Society for Heart Research – European Society for Cardiology Meeting (Frontiers in Cardiovascular Biology); Barcelona: July 2014
- Member of judging panels for best presentations at several meetings of the PSSA and SA Heart since 2004
- Poster judge at the International Society for Heart Research – European Society for Cardiology Meeting (Frontiers in Cardiovascular Biology); Barcelona: July 2014
- Invited reviewer for various MRC and NRF research grant applications since 2004
- Reviewer for the Austrian Science Fund (Research Grant application of Prof S Hallstrom; Austria): 2011
- Invited reviewer for several international, high impact scientific journals, including: *Molecular and Cellular Biochemistry*, *Life Sciences*, *J Histochem Cytochem*, *Renal Failure*, *Cardiovascular Research*, *Circulation*, *Cardiovascular Journal of Africa*, *Journal of Cellular and Molecular Medicine*, *PLOS One* and others.

#### RESEARCH OUTPUTS SUMMARY:

- 39 peer-reviewed published articles + 1 article in press (January 2020)
- 2 peer-reviewed book chapters
- 80+ conference papers, of which 43 published as peer-reviewed abstracts; invited speaker at 10 international conferences and scientific meetings
- PhD Supervision / co-supervision: 17 candidates (11 graduated); MSc Supervision / co-supervision: 12 candidates (11 graduated).
- Thesis / dissertation examination: 27 MSc theses and 11 PhD dissertations

#### PEER-REVIEWED JOURNAL ARTICLES IN LAST 5 YEARS:

1. Espach Y, Lochner A, **Strijdom H**, Huisamen B. ATM protein kinase signaling, type 2 diabetes and cardiovascular disease. *Cardiovascular Drugs and Therapy* 2015; 29(1): 51-58.
2. **Strijdom H**, De Boever P, Nawrot TS, Goswami N. HIV/AIDS: emerging threat to cardiovascular health in sub-Saharan Africa. *S Afr Med J* 2016; 106(6): 537.
3. Truter D, **Strijdom H**, Everson F, Kotzé SH. Mucin secreting cells in the stomach and colon are altered by combination antiretroviral treatment in an obese rat model. *Acta Histochem*. 2017; 119(2): 122-128.
4. Westcott C, Genis A, Mthethwa M, Graham R, Van Vuuren D, Huisamen B, **Strijdom H**. Fenofibrate protects against the harmful effects of TNF-alpha. *SA Heart*. 2017; 14: 22-34.
5. **Strijdom H**, De Boever P, Walzl G, Essop MF, Nawrot TS, Webster I, Westcott C, Mashele N, Everson F, Malherbe ST, Stanley K, Kessler HH, Stelzl E, Goswami N. Cardiovascular risk and endothelial function in people living with HIV/AIDS: design of the multi-site, longitudinal EndoAfrica study in the Western Cape Province of South Africa. *BMC Infect Dis*. 2017;17(1):41. doi:10.1186/s12879-016-2158-y.
6. Nduhirabandi F, Huisamen B, **Strijdom H**, Lochner A. Role of melatonin in glucose uptake by cardiomyocytes from insulin resistant wistar rats. *Cardiovasc J Africa*. 2017; 28: 1-9.

7. Nel S, **Strijdom H**, Genis A, Everson F, Van Wijk R, Kotzé SH. A histomorphometric study on the effects of antiretroviral therapy (ART) combined with a high-calorie diet (HCD) on aortic perivascular adipose tissue (PVAT). *Acta Histochem.* 2017; 119(5): 555-562.
8. Oyeyipo IP, Skosana BT, Everson FP, **Strijdom H** and Du Plessis SS. Highly active antiretroviral therapy alters sperm parameters and testicular antioxidant status in diet-induced obese male Wistar rats. *Toxicol Res.* 2017; 34(1): 1-8.
9. Thomas M, Davis T, Loos B, Sishi B, Huisamen B, **Strijdom H**, Engelbrecht AM. Autophagy is essential for the maintenance of amino acids and ATP levels during acute amino acid starvation in MDAMB231 cells. *Cell Biochem Funct.* 2018; 36: 65-79.
10. Truter D, Chellan N, **Strijdom H**, Webster I, Rawstorne J, Kotzé SH. Histomorphological changes in the pancreas, liver and kidney in male Wistar rats on antiretroviral therapy and melatonin treatment. *Acta Histochem.* 2018; 120(4): 347-355.
11. Everson FP, Genis A, Ogundipe TR, De Boever P, Goswami N, Lochner A, Blackhurst D, **Strijdom H**. Treatment with a fixed dose combination antiretroviral therapy drug containing tenofovir, emtricitabine and efavirenz is associated with cardioprotection in high calorie diet-induced obese rats. *PLoS ONE.* 2018; 13(12): e0208537. <https://doi.org/10.1371/journal.pone.0208537>
12. Marincowitz C, Genis A, Goswami N, De Boever P, Nawrot TS, **Strijdom H**. Vascular Endothelial Dysfunction in the wake of HIV and ART. *FEBS J.* 2019; 286(7): 1256-1270. doi: 10.1111/febs.14657.
13. Webster I, Imperial EG, Westcott C, **Strijdom H**. The cardiovascular effects of *Aspalathus linearis* supplementation in male Wistar rats receiving fixed dose combination first-line antiretroviral therapy. *Cardiovasc J Africa.* 2019; 30: 95-102.. doi: 10.5830/CVJA-2018-075
14. Katoto PDMC, Byamungu L, Brand AS, Mokaya J, **Strijdom H**, Goswami N, De Boever P, Nawrot TS, Nemery B. Ambient Air Pollution and Health in Sub-Saharan Africa: Current Evidence, Perspectives and a Call to Action. 2019. *Environ Res.* 2019; 173: 174-188. DOI: 10.1016/j.envres.2019.03.029
15. Everson F, De Boever P, Nawrot TS, Goswami N, Mthethwa M, Webster I, Martens DS, Mashele N, Charania S, Kamau F, **Strijdom H**. Personal NO<sub>2</sub> and volatile organic compounds exposure levels are associated with markers of cardiovascular risk in women in the Cape Town region of South Africa. *Int. J. Environ. Res. Public Health.* 2019; 16(13): 2284. DOI: 10.3390/ijerph16132284.
16. Kamau F, **Strijdom H**, Mwangi P, Blackhurst D, Imperial E, Salie R. Antiretroviral drug-induced endothelial dysfunction is improved by dual PPAR $\alpha$ / $\gamma$  stimulation in obesity. *Vasc Pharmacol.* July 2019. DOI: 10.1016/j.vph.2019.106577.
17. Berner K, **Strijdom H**, Essop MF, Webster I, Morris L, Louw Q. Fall history and associated factors among adults living with HIV-1 in the Cape Winelands, South Africa: an exploratory investigation. *Open Forum Infect. Dis.* October 2019; 6(10): ofz401. DOI: 10.1093/ofid/ofz401.
18. Everson F, Martens DS, Nawrot TS, Goswami N, Mthethwa M, Webster I, Mashele N, Charania S, Kamau F, De Boever P, **Strijdom H**. Personal exposure to NO<sub>2</sub> and benzene in the Cape Town region of South Africa is associated with shorter leukocyte telomere length in women. *Epub ahead of print: Environ. Res.* 2019. DOI: 10.1016/j.envres.2019.108993. *Environ. Res.* 2020; 182:108993.
19. Smit-van Schalkwyk M, Windvogel S, **Strijdom H**. The protective effects of rooibos and melatonin on nicotine-induced vascular injury and oxidative stress in Wistar rats. **Accepted for publication.** *Cardiovasc J Africa.* 2019.

**PROFESSIONAL MEMBERSHIP:**

- Health Professionals Council of South Africa (Registration status: Medical Practitioner)
- South African Heart Association
- South African Society for Cardiovascular Research
- Physiology Society of Southern Africa
- European Society of Cardiology – Working Group on Cellular Biology of the Heart
- European Society of Cardiology – Working Group on Atherosclerosis and Vascular Biology