

Short CV – Principal Investigator

CURRICULUM VITAE



1. GENERAL

Full Name: Sarah Muriel Meiring
Work Address: Department of Haematology and Cell Biology
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Nationality: South African

2. CAREER

Qualifications

Matriculation Results (1986) Biology HG (B), Science HG (B), Mathematics HG (D), Afrikaans First Language HG (D), English Second Language HG (D), Accountancy SG (B).

B.Sc Degree (1987 - 1989) - Physiology 3, Biochemistry 3, Physiology 2, Biochemistry 2, Chemistry 2, Physiology 1, Zoology 1, Mathematics 2, Chemistry 1, Computer Science 1.

Honours in Physiology (1990) Physiology of Nutrition, Occupational Physiology, Electrophysiology, Physiology of Behaviourism, Physiology of the Nervous System, Hemodynamics.
Title of project: **Die invloed van Gaboon addertoksien op die kalium- en kalsiumvloei deur ionkanale in die selmembran.**

M. Med. Sc in Haematology (1992-1994) Title of dissertation: **'n In Vitro-vloeikamer as model om die hemostatiese funksie van endoteelselle te bepaal.**

Ph. D (1994-1996) Title of thesis: **Plasma elimination of recombinant (r)-Hirudin and the r-hirudin-thrombin complex in baboons.**

Post-doctoral study (1997) Title of projects: **1) Development of monoclonal antibodies against the platelet integrin $\alpha_2\beta_1$ -I-domain. 2) Determination of an anti-platelet Gp Ib antibody by using phage display technology. 3) Selection of antithrombotic proteins out of haematophagous parasites. 4) Expression of von Willebrand**

Factor mutant.

MBA (2001-2003)

Subjects: **Business Conditions Analysis, Human Resource Management, Strategy and Company Analysis, Financial and Managerial Accounting, Marketing for Managers, Behaviour in Organisations, Corporate Business Law and Ethics, Analytical Methods, E-Commerce, Project Management, Economics for Managers, Financial Management, Health Economics, Services Marketing, Strategy Dynamics and Contemporary Management Issues.**

RESEARCH EXPERTISE

Scientific domain: Health and Medical Sciences

Primary research level: Health Sciences

Secondary research level: Haematology

Fields of specialization: Thrombosis and Haemostasis

Academic Awards (last 10 years):

1. In 2008, I was nominated for a National Science and Technology Forum Award in the category B: Individual through Research and Outputs over the last 5 years.
2. I received the Muller-Potgieter medal for the best laboratory article published in 2007 at our local Faculty Forum of 2008
3. A student of mine received a certificate for runner-up poster presentation at our local Faculty Forum of 2008 in the Senior laboratory category.
4. We received a certificate for runner-up poster presentation at our local Faculty Forum of 2008 in the junior laboratory category
5. In 2009, I was asked by the editorial office of the journal "European Haematology" to write an article on the "Laboratory diagnosis of Von Willebrand Disease".
6. I received the Muller-Potgieter medal for the best laboratory article published in 2009 at our local Faculty Forum of 2010
7. The NHLS saluted me for my research and service delivery work by placing an article about my work in the Business Women magazine of 2010.
8. In 2010, I received a Top 10 Award by the Department of Science and Technology for one of the best top 10 innovations in the country.
9. I received a R10 000 prize for the best poster presented at the annual congress of the South African Society for Thrombosis and haemostases
10. In 2011, an M.Med Sc student of mine received a certificate for the best oral presentation in the category Junior laboratory research at the Faculty Forum of the Faculty of Health Sciences at the University of the Free State.
11. In 2012, I received NRF Rating in the C2 class.
12. In 2012 I received NRF-Rating in the C2 class.
13. Since 2012 I co-heads the Haemostasis Research Focus Area in the Faculty of Health Sciences at the University of the Free State.
14. In 2014 I received seed-funding of R500000 from the Technology Innovation Agency for the development of new diagnostic kits.
15. In 2016 I concluded a Service Level Agreement between the National Health Laboratory Service and the University of the Free State (UFS) for specialised haemostasis tests done in the Special Haemostasis Laboratory of the UFS.

Professional Experience (Appointments):

<i>Year</i>	<i>Appointment</i>
1990	I have done part-time work as a laboratory assistant at the Physiology Department of the Potchefstroom University.
1991 - 1996	I worked as a Medical Scientist for the University of the Free State and the Provincial Administration of the Free State.
1997	I worked as a post-doctoral student in the Laboratory for Thrombosis Research in Kortrijk, Belgium under supervision of Prof. Hans Deckmyn.
1998 – 2001	I worked as a Principle Medical Scientist for the University of the Free State and the Provincial Administration of the Free State.
2002-2009	I worked as a Specialist Scientist for the University of the Free State and the National Health Laboratory Services.
2010-2014	I worked as a Specialist Scientist for the University of the Free State and the National Health Laboratory Services and I am the Research Manager of the department of Haematology and Cell Biology.
2014 - 2017	I worked as Principal Specialist Scientist for the University of the Free State and the National Health Laboratory Services and I was appointed as the Head of the Haemostasis Research Focus Area of the Faculty of Health Sciences at the University of the Free State.

Courses Attended

1. Computer courses: Lotus 1-2-3, Word 5.0 for Dos, Quattro Pro, Department of Biophysics, UFS., 1992.
2. Molecular Biology Honours course, Department of Biochemistry, UFS., 1995
3. Masters degree in Business Administration at the UFS.
4. Scientific writing, 2005, UFS
5. Sustainable Funding Strategies and Dynamic Proposal-writing Skills, UFS, April 2007
6. Project management and research, 2008
7. GCP (good clinical practice), 2009
8. Advanced project management, 2010

Organizations

1. Secretary, O.F.S. Society of Medical Scientists.
2. Member, South African Haematological Society.
3. Registered at the Health Professions Council of South Africa
4. Member of the International Society for Thrombosis and Haemostasis

Research Management Experience

- 2.6.1 Reviewer: Journal of Pharmaceutical Sciences 1999-2012
- 2.6.2 Evaluator: NRF – rating applications
NRF – applications for research funding
- 2.6.3 External examiner of M.Sc and PhD degrees
- 2.6.4 Participation in Standardization Committee studies and discussions. I participate in the thrombin generation studies of the Standardization Committee of the International Society on Thrombosis and Hemostasis.

Promotor (last 5 years)

1. P.Setlaba. Development of an ELISA assay to measure the Von Willebrand Factor propeptide levels in human plasma. **M.Med. Sc., Faculty of Health Sciences, UFS., Bloemfontein 2011- 2013.**
2. W.E. Allers. The effect of inflammatory cytokines, tissue factor and thrombin on the synthesis of ADAMTS13 in cultures human aortic endothelial cells. **M. Med. Sc. Faculty of Health Sciences, UFS., Bloemfontein 2009 –2012**
3. E. Le Roux. Pro-thrombotic activity of endothelial micro-particles. **M. Med. Sc. Faculty of Health Sciences, UFS., Bloemfontein 2009 –2012**
4. L. Cloete. Development of a factor VIII binding assay using phage display technology. . **M. Med. Sc. Faculty of Health Sciences, UFS., Bloemfontein 2011 –2013**
5. M. Khemisi. Thrombogenicity of tissue engineered blood vessels. **M.Med. Sc, Faculty of Health Sciences, UFS., Bloemfontein 2013 – 2014**
6. J. Vermeulen. Optimised large-scale production and *in vitro* characterisation of an anti-tissue factor scFv. **PhD, Faculty of Health Sciences, UFS., Bloemfontein 2013 – 2016**
7. R. Maleka. Evaluation of a VWF-propeptide ELISA kit. **M.Sc Faculty of Health Sciences, UFS., Bloemfontein 2015-2017**
8. M. Khemisi. Characterisation of ADAMTS epitopes of auto-antibodies in patients with HIV- associated TTP. **PhD, Faculty of Health Sciences, UFS., Bloemfontein 2016 – 2018**
9. MB Setlai. VWF status in HIV-associated TTP. **PhD, Faculty of Health Sciences, UFS., Bloemfontein 2016 – 2018**

Co-Promoter (last 5 years):

1. WJ van Rensburg. Characterisation of platelet receptors in the Cape Chacma baboon (*Papio ursinus*). **PhD, Faculty of Health Sciences, UFS., Bloemfontein 2011 – 2015**
2. E Prtorius. The effect of Valproic acid on platelet function. **PhD, Faculty of Health Sciences, UFS., Bloemfontein 2015 – 2018**

Study Leader: B. Sc Honours students (2 students per year)

Accepted applications for Bursaries and funds (last 5 years)

1. I received a THUTUKA award by the National Research Foundation of South Africa from 2007- 2013. This is for 2 cycles of three years each and the funding for 1 year amount to R207 000. My research area is “Haemostatic disorders: towards a better understanding and treatment”.
2. I received a research grant from the medical Research Council of R80 000 per year for 3 years since 2007 for the project “The Molecular Mechanism of Tumour-Selective Apoptosis of Curcumin in Acute Myeloid Leukemia”.
3. I received the NHLS pathology Award of R500 000 in 2011-2014 for the project “Haemostatic disorders: cost-effective improvement in laboratory diagnosis and treatment”
4. I received an interdisciplinary grant in 2014 of R100 000 from the University of the Free state for the project “development of a diagnostic assay for the determination of the VWF propeptide in plasma”.
5. I received seed-funding from the Technology Innovation Agency of R500 000 for the development and commercialisation of diagnostic assays in 2015.
6. I received funding from the NRF in the competitive program for rated researchers 2015 - 2017 for the project “auto-antibodies in HIV-associated TTP”.

REFEREED/PEER-REVIEWED ARTICLES IN JOURNALS (LAST 5 YEARS)

1. Jafta AD, Meiring SM, Conradie C (2010). Valproic Acid associated platelet dysfunction: Case Report. *African journal of Haematology and Oncology* **1(2)**:15-16.
2. Chen W, Leiter A, Dong Y, Meiring M, Louw V, Koeffler P (2010). Cucurbitan B inhibits growth, arrests the cell cycle and potentiates antiproliferative efficacy of cisplatin in cutaneous squamous cell carcinoma cell lines. *International Journal of Oncology* **37(3)**: 737-743.
3. Meiring SM, Kelderman M, Coetzee MJ, Badenhorst PN (2011). Laboratory Diagnosis and management of von Willebrand Disease in South Africa. *Seminars in Thrombosis and Haemostasis* **37(5)**:576-580.
4. Meiring SM, Webb M, Goedhals D, Louw V (2012). HIV associated Thrombotic Thrombocytopenic Purpura – What we know so far. *European Oncology and Haematology*, **8(2)**:89-91.
5. Favaloro EJ, Bonar R, Chapman K, Meiring M, Funk D (2012). Differential sensitivity of Von Willebrand factor (VWF) “activity” assays to large and small molecular weight forms: a cross-laboratory study comparing ristocetin cofactor, collagen-binding and mAb-based assays. *Journal of Thrombosis and Haemostasis* **10(6)**:1043-1054.
6. Malan N, Von Kanel R, Schutte A, Huisman H, Smith W, Mels C, Kruger K, Meiring M, Van Rooyen J, Malan L (2013). Testosterone and acute stress are associated with fibrinogen and von Willebrand factor in African men: The SABPA study. *International Journal of Cardiology* **168 (5)**:4638-4642.
7. Von Kanel R, Hamer M, Malan N, Scheepers K, Meiring M, Malan L (2013). Procoagulant

- reactivity to laboratory acute mental stress in Africans and Caucasians and its relation to depressive symptom: The SABPA Study. *Thrombosis and Haemostasis* **110(5)**:977 -986.
8. Favalaro EJ, Bonar R, Meiring M, Duncan E, Mohammed S, Sioufi J, Marsden K (2014). Evaluating errors in the laboratory identification of von Willebrand disease in the real world *Thrombosis Research* **134**:393-403.
 9. Allie S, Stanley A, Bryer A, Meiring M, Combrinck MI (2015). High levels of von Willebrand factor and low levels of its cleaving protease, ADAMTS13, are associated with stroke in young HIV-infected patients. *International Journal of Stroke* **10(8)**:1294-1296.
 10. Favalaro EJ, Bonar RA, Mohammed S, Arbeleaz N, Niemann J, Freney R, Meiring M, Sioufi J, Marsden K (2016). Type 2M Von Willebrand disease – more often misidentified than correctly identified (2016). *Haemophilia* **22(3)**:145-155
 11. Meiring M, Allers W, Le Roux E, (2016). Tissue Factor, the most potent stimulator of Von Willebrand factor synthesis by human umbilical vein endothelial cells. *International Journal of Medical Sciences* **13(10)**:759-764.

PATENT APPLICATIONS

PATENT NO	PATENT TYPE	APPLICATION DATE	GRANT DATE	TITLE OF INVENTION
2009/03360	Provisional	15 May 2009	--	Inhibitory antibody fragments to human tissue factor
2010/05601	Provisional	04 Aug 2010	.	Antibody fragments to ADAMTS13 and VWF-propeptide
2011/05426	Complete	22 July 2011	26 March 2011	Antibody fragments to ADAMTS13 and VWF-propeptide
2014/02808	Provisional	16 April 2014	--	Antibody fragments specific to VWF-propeptide

PAPERS PRESENTED (last 5 years)

International

1. Meiring SM, Webb M, Goedhals D, Louw VJ. Thrombotic potential in HIV and HIV-associated TTP. **XXIIIrd Congress of the International Society on Thrombosis and Haemostasis, July 2011, Kyoto, Japan.**
2. Meiring SM, Allers W, Le Roux E, Badenhorst P. Tissue factor, a potent stimulator of cultured endothelial cells. **57th Annual Scientific and Standardisation Committee Meeting of the International Society on Thrombosis and Haemostasis, July 2012, Liverpool, UK.**

3. Meiring SM, Le Roux E, Louw V. Effect of inflammatory cytokines and coagulation factors on endothelial microparticle formation and content. **XXIVth Congress of the International Society on Thrombosis and Haemostasis, July 2013, Tokyo Japan.**
4. Harsfalvi J, Szekeres, Csike K, Meiring SM, Sandor A, Pataki L, Nemeti A, Ukvardy M. Quality specifications for imprecision, bias and total error to be used for measurement of VWF antigen, activity and multimerisation. **XXIVth Congress of the International Society on Thrombosis and Haemostasis, July 2013, Tokyo Japan.**
5. Meiring SM, Van Rensburg B, Louw V. Thrombotic profiles of patients with kidney disease. **60th Annual Scientific and Standardisation Committee Meeting of the International Society on Thrombosis and Haemostasis, July 2014, Milwaukee, USA.**
6. Meiring SM, Setlai BDP, Bragg R. Development of a VWF propeptide assay. **XXVth Congress of the International Society on Thrombosis and Haemostasis, July 2015, Toronto, Canada.**
7. Meiring SM, Jafta, D. Thrombotic profiles of patients undergoing kidney biopsies. **African Society for laboratory Medicine, December 2016, Cape Town, South Africa.**

National

1. E Le Roux, S M Meiring, W E Allers, Charles Chen. The Effect of Curcumin on Telomere Length and caspase Activity in the U937 Acute Myeloid Leukaemia Cell Line. **50th Annual Congress of the Federation of South African Societies of Pathology, Cape Town, 2 – 5 September 2010.**
2. S M Meiring, PDB Setlaba, MJ Coetzee. Diagnosis of Type 1 VWD patients with increased clearance of VWF. **South African Society of Thrombosis and Haemostasis, Johannesburg, October 2010.**
3. Meiring SM, Webb M, Goedhals D, Louw VJ. Thrombotic potential in HIV and HIV-associated TTP. **Labmed 2011, Annual congress of the federation of South African Societies of Pathology, Sept 2011, Johannesburg.**
4. E le Roux, S M Meiring. Endothelial microparticles: possible role the thrombosis and inflammation. **Labmed 2011, Annual congress of the federation of South African Societies of Pathology, Sept 2011, Johannesburg.**
5. W Allers, S M Meiring. Effect of inflammatory cytokines and coagulation factors on endothelial cells. **Labmed 2011, Annual congress of the federation of South African Societies of Pathology, Sept 2011, Johannesburg.**
6. L Cloete, S M Meiring. Selection of a factor VIII binding antibody to diagnose patients with type 2N VWD. **Labmed 2011, Annual congress of the federation of South African Societies of Pathology, Sept 2011, Johannesburg.**
7. M Kelderman, S M Meiring. Development of the VWF multimeric analysis. **Labmed 2011, Annual congress of the federation of South African Societies of Pathology, Sept 2011, Johannesburg.**
8. Meiring SM, Coetzee MJ, Pieters H. Developing cost-effective tests: operational gear for the National health Insurance. **Annual congress of the federation of South African Societies of Pathology, Cape Town 2013.**
9. Meiring SM, Le Roux E, Louw V. Effect of inflammatory cytokines and coagulation factors on endothelial microparticles. **Annual congress of the federation of South African Societies of Pathology, Cape Town 2013.**
10. M Meiring, P Setlai. Development of a VWF-propeptide assay kit by using phage display technology. **UNIPATH2014 Pathology congress, Pretoria, September 2014**
11. Meiring SM, Jafta, D. Thrombotic profiles of patients undergoing kidney biopsies. **PATHRED 2015, Johannesburg, April 2015**

Local

1. SM Meiring, M Webb, V Louw, D Goedhals. Trombin potential in HIV positive patients. **Faculty Forum, UFS, August 2010**

2. J-G Vermeulen, S M Meiring. Characterisation of a tissue factor inhibitor antibody fragment. **Faculty Forum, UFS, August 2010**
3. P Setlaba, L Pretorius, D Jaffa, S M Meiring. Thrombo-Elastography as well as platelet function analysis are needed to predict bleeding during surgery. **Faculty Forum, UFS, August 2010**
4. E le Roux, S M Meiring. Endothelial microparticles: possible role the thrombosis and inflammation. **Faculty Forum, UFS, August 2011**
5. W Allers, S M Meiring. Effect of inflammatory cytokines and coagulation factors on endothelial cells. **Faculty Forum, UFS, August 2011**
6. L Cloete, S M Meiring. Selection of a factor VIII binding antibody to diagnose patients with type 2N VWD. **Faculty Forum, UFS, August 2011**
7. M Kelderman, S M Meiring. Development of the VWF multimeric analysis. **Faculty Forum, UFS, August 2011**
8. SM Meiring, M Webb, V Louw. HIV-associated TTP: The effect of microparticles on the thrombotic tendency in these patients. **Faculty Forum, UFS, August 2012**
9. Khemisi M, Meiring SM. Re-endothelialization of decellularized baboon arteries. **Faculty Forum, UFS, August 2015**
10. Meiring SM. Development of a Von Willebrand Factor propeptide assay. **Faculty Forum, UFS, August 2015**
11. Vermeulen J, Meiring SM. In-vitro refolding of a single chain variable fragment against human tissue factor. **Faculty Forum, UFS, August 2015**
12. Conradie C, Meiring SM. Sensitivity of the PFA-100 to Von Willebrand disease and aspirin-intake. **Faculty Forum, UFS, August 2015**
13. Maleka R, Meiring SM. Von Willebrand factor status in patients undergoing kidney biopsies. **Faculty Forum, UFS, August 2015**
14. Meiring SM. HIV-associated TTP, what we know so far. **Faculty Forum, UFS, August 2016**
15. Van Marle A, Joubert J, Meiring SM. Comparison of the different blood products currently available in SA for the treatment of thrombotic thrombocytopenic purpura. **Faculty Forum, UFS, August 2016**

On invitation

1. The role of Von Willebrand Factor in bleeding and thrombotic disorders. **Free State Province Department of Health Research Day, 7 June 2012**
2. HIV-associated TTP: what we know so far. **UNIPATH2014 Pathology congress, Pretoria, September 2014.**
3. Diagnosis of Von Willebrand Disease – the pitfalls. **PATHRED2017 Congress, Johannesburg, June 2017**

REFEREES

- 1 Prof. Glen Taylor Research Director:
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2. Dr Henry Davis Innovation Consultant University of the Free State Bloemfontein 9300 Tel:
(044) 8734701