# Curriculum Vitae - Prof. Felicity Jane Burt

## Personal details

**Name and surname**: Felicity Jane Burt

**Place of birth**: Harare, Zimbabwe

**Gender**: Female

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**Identification no**: 6212190665088

## Education and Qualifications

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| **Institution and Location** | **Degree** | **Year** |
| Alexandra Park Primary School, Harare, Zimbabwe.  Queen Elizabeth High School, Harare, Zimbabwe. | School leaving qualification: Associated Examining Board,  O, M and A levels (Matric Exemption) | 1982 |
| University of Witwatersrand, Johannesburg, South Africa | BSc | 1983 |
| University of Witwatersrand, Johannesburg, South Africa | BSc (Honours) (Biochemistry) | 1984 |
| University of Witwatersrand, Johannesburg, South Africa | MSc (Physiology) | 1988 |
| University of Witwatersrand, Johannesburg, South Africa | PhD (Medical Virology)  Thesis title: Diagnosis, pathogenesis and epidemiology of Crimean-Congo haemorrhagic fever virus | 1998 |

## Employment history

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| **Period** | **Position** | **Place** | **Responsibility** |
| **Jan 2016- Dec 2026**  **(current)** | Research Chair funded by the DST and administered by the NRF, South African Research Chairs Initiative (SARChI) for Vector-Borne and Zoonotic Pathogens Research | Division of Virology,  NHLS and Faculty of Health Sciences,  University of the Free State (UFS) | Holder of Research Chair and responsible for research activities in the Division of Virology |
| **March 2006-present** | Professor from 2016 & Medical Scientist | Division of Virology,  NHLS and Faculty of Health Sciences,  UFS | Responsibilities include managing all postgraduate activities within the Division of Virology. I am principal investigator and head of two research groups, responsible for conceptualising, managing and supervising research programs. |
| **Oct 1988-Feb 2006** | Specialist Scientist | Special Pathogens Unit (SPU), NICD, NHLS, Johannesburg. | The SPU is now known as the Centre for Emerging Zoonotic and Parasitic Diseases. Responsibilities included second in charge of the SPU, responsible for the diagnosis and investigation of viral haemorrhagic fevers (VHF), arboviruses and rabies in southern Africa; responsible for the diagnostic laboratory in SPU and the Arbovirus Unit, confirmation of international outbreaks of VHF and submitting results to World Health Organization and partners; principle investigator for grant applications and managing research projects; publication of research and presentation of research at conferences, development and implementation of molecular and serological diagnostic assays including preparation of reagents and validation of assays for diagnostic purposes, training of new staff, accreditation of Arbovirus Diagnostic Laboratory with SANAS. |
| **Feb 1985-Sept 1988** | Medical Scientist | Serum and Vaccine Department, South African Institute for Medical Research, Johannesburg. | Responsibilities included preparation and purification of hyperimmune antiserum, establishment of Quality Control Laboratory and preparing related Standard Operating Procedures |

**Brief profile**

I am currently the holder of a South African Research Chair in vector-borne and zoonotic pathogens research. The work of the Research Chair is to investigate medically significant vector-borne and zoonotic viruses. The research activities of the Chair include establishing a metagenomics platform for virus discovery and improve molecular and serological tools for diagnosis and detection of known and novel vector borne pathogens; to genetically characterize novel pathogens and determine genetic relationships between novel and existing vector-borne and zoonotic pathogens; to investigate host immune responses (innate and adaptive) against selected pathogens of medical significance in South Africa, (e.g. CCHFV), and to understand immune correlates of protection that contribute to development of novel treatment and vaccines and establish a drug discovery programme for arboviral/zoonotic viruses.

I am a virologist with expertise in viral haemorrhagic fevers (VHF) and arboviruses. I have investigated associations between genotype and virulence, immune profiling, identifying immune correlates of protection and evaluation of candidate vaccines. Studies on molecular epidemiology contribute to our knowledge and understanding of how viruses circulate and are maintained in nature, their endemicity and factors that play a role in outbreaks. Genetic diversity is important for development of molecular assays and vaccine development. Identifying immune correlates of protection plays a role in development of novel vaccines. While employed at the National Institute for Communicable Diseases in Johannesburg (1988-2006) I was involved in the diagnosis and investigation of outbreaks of VHF and arboviruses. This included outbreaks of CCHFV that occurred annually in South Africa; filovirus outbreaks in other regions of Africa (Ebola DRC 1995, SA1996, Uganda 2000, Marburg DRC 1999) and RVFV in Saudi Arabia 2000. I have developed in house serological and molecular assays that were used as tools for identification of outbreaks, as well as tools for surveillance. I contributed to training scientists on serological techniques during the RVFV outbreak in Saudi Arabia (2000). I have now established a research group at the University of the Free State and National Health Laboratory Service in Bloemfontein, and I train postgraduate students and postdoctoral fellows in arbovirus research and surveillance, with a One Health approach to zoonotic diseases.

I have more than 30 years’ experience in research, diagnosis and investigation of viral haemorrhagic fevers and arboviruses in Africa, including Crimean-Congo haemorrhagic fever (CCHF), Rift Valley fever (RVF), yellow fever, and the formidable Ebola and Marburg viruses. I have extensive experience in handling biosafety level 3 pathogens and was responsible for the establishment of a biosafety level 3 facility for zoonotic pathogens at the University of the Free State. I previously handled select agents of arboviral and zoonotic origin within the confines of a maximum security laboratory (biosafety level 4 laboratory) situated at the National Institute for Communicable As a result of my publications and contributions to the field, I am recognized internationally in the field of viral haemorrhagic fevers and arboviruses.

## Research groups

**SARChI, Vector borne and zoonotic viruses research group**

Principal Investigator and group leader of the “Vector-borne and zoonotic viruses research group”. Research focuses on characterizing humoral and cellular immune responses in patients with Crimean-Congo haemorrhagic fever (CCHF) virus infections; preparation of recombinant antigens for development of diagnostic assays for diagnosis of CCHF, detection and differentiation of flaviviruses, identification of novel viral pathogens and arboviruses and evaluation of vaccines for CCHF, yellow fever and Rift Valley fever viruses.

I am involved in all relevant academic duties and member of management team for the Division of Virology. I am responsible for publication of research findings in international journals, and presentation of results at international and local conferences.

Principal investigator for grant applications for funding for research projects Management of NHLS intern medical scientist training programs in the Division of Virology.

Establishing research collaborations, within the National Health Laboratory Services (NHLS), University of the Free State (UFS), and with national and international collaborators.

## Current collaborators

* **Prof A Mirazimi**, Karolinski Institute, Stockholm.
* **Prof S Mahalingham**, NHMRC Senior Research Fellow (SRF) and Professor of Virology, Institute for Glycomics, Griffith University, Queensland, Australia.
* **Dr J Weyer**, Head of Centre for Emerging and Zoonotic Pathogens, National Institute for Communicable Diseases (NICD), Sandringham, Johannesburg. CCHFV research.
* **Prof D Goedhals**, PathCare Vermaak, Pretoria

## Study trips

**May-July 1996:** Infectious Disease Pathology Activity, Division of Viral and Rickettsial Diseases, Center for Disease Control and Prevention (CDC), Atlanta, Georgia, USA. Completed project on immunohistochemical and *in situ* localization of Crimean-Congo hemorrhagic fever in human tissues and implications for CCHF pathogenesis.

**Member of international outbreak response teams for investigation of viral haemorrhagic fever outbreaks**

1. **Democratic Republic of the Congo, 1995**. Member of international team investigating outbreak of Ebola virus in Kikwit, Democratic Republic of the Congo.
2. **Saudi Arabia, September, 2000**. Travelled to Saudi Arabia as a member of a team of scientists from the Special Pathogens Unit to set up laboratory facilities for testing livestock sera for evidence of Rift Valley fever infection. Responsible for training of the Saudi Arabian laboratory staff to perform the tests. Successfully tested in excess of 7000 livestock sera in 3 weeks.
3. **Uganda, November, 2000**. Member of international team investigating outbreak of Ebola virus in Gulu, Uganda.

## Professional registration, member of scientific advisory boards, committee membership, expert committees

**Professional registration**

Registered with Health Professions Council South Africa as Medical Biological Scientist, category: Medical Virologist. Registration no MW0002720

**Scientific advisory boards**

Current memberships

Member of the International Scientific Advisory Board for The Lancet, Infectious Diseases,

Member of the International Scientific Advisory Board for Southern African Centre for Infectious Diseases Surveillance (SACIDS).

Member of Scientific Advisory Board for Polio Research Foundation, (grant funding for Virology), Sandringham,

Johannesburg.

**Scientific advisory boards**

Previous memberships

Member of International Scientific Advisory Board for Global Research Collaboration for Infectious Disease Preparedness (2016-2019)

**International Committee**

Member of the Advisory Council for International Society on Crimean-Congo haemorrhagic fever

Member of international advisory committee for taxonomy of Bunyaviridae family

Invited member of Bunyaviridae family advisory group for the current World Health Organization (WHO) led effort to prioritize diseases of epidemic and pandemic threat

Invited member of Toganviridae family advisory group for the current World Health Organization (WHO) led effort to prioritize diseases of epidemic and pandemic threat

**Expert committees**

Member of Department of Health One Health Forum and member of Expert Committee for Zoonotic Diseases.

Member of Virology Expert Committee (while acting HOD)

**Editorial Boards**

Editor Journal of Virological Methods

Associate editor Virology Journal

Guest associate editor Frontiers in Virology

Guest co-editor Vaccines Special Issue Perspective technologies of vaccination and immunotherapy

**UFS Committees**

Chair of University of the Free State Three Schools of Medicine: Research and Postgraduate Committee.

Member of the Health Sciences Research Ethics Committee.

Member of the Health Sciences Research Ethics Exco Committee

Member of the School of Pathology Exco Committee.

Member of the Environment and Biosafety Research Ethics Committee

Previously Head of the UFS COVID-19 Task Committee during pandemic

**NHLS**

Member of the PathRed 2023 Scientific Organising Committee

## Academic expertise

**Teaching and training of students**

**Prior to 2006 I was employed at the National Institute for Virology (now the National Institute for Communicable Diseases) for 17 years where I was involved in detection and investigation of outbreaks of viral haemorrhagic fevers and arboviruses in Africa and therefore not involved in postgraduate training, teaching or supervision of students.**

* **2020 – to date:** responsible for establishment and managing of DALRRD and NDOH compliant biosafety level (BSL) 3 laboratory
* **2010 – to date:** responsible for postgraduate science degrees offered by the Division of Virology.
* **2010 – to date**: responsible for establishing and implementing guidelines for the training of intern medical scientists. This is a two year internship that qualifies students to register with the Health Professions Council South Africa (HPCSA).
* **2006 – 2009:** Module leader: 3rd year Medical Microbiology, Faculty of Health Sciences, UFS, Mechanisms of Disease
* **2006 – 2009**: Module leader: 3rd year Medical Microbiology, Faculty of Health Sciences, UFS, Pathogenic Microorganisms
* **2007 – 2014**: Course co-ordinator: BMedSc Honours,
* **2007 – 2014:** Module leader for BMedSc Honours module Current Topics in Virology
* **2004 – 2005**: Lecturer: Diploma Tropical Medicine and Hygiene, University of the Witwatersrand, Topic Arboviruses

**Postgraduate supervision completed, (MMedSc and above only) (Institution only mentioned if not UFS)**

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| --- | --- | --- |
| **Name of student**  **(Institution if not UFS)** | **Degree / Title of dissertation / Thesis** | **Year completed** |
| **PS Seleka**  University of Witwatersrand | **MSc**: “Recombinant antigens for diagnosis of Crimean-Congo haemorrhagic fever (CCHF) infections “ | 2003 |
| **Rudo Ruth Samudzi** | **MMedSc**: “Preparation of recombinant antigens for demonstrating antibody responses in patients with Crimean-Congo haemorrhagic fever virus infections” | 2011 |
| **Catharina Elizabeth Combrinck** | **MMedSc**: ”Development of detection methods for human papillomaviruses associated with recurrent respiratory papillomatosis and characterization of associated strains” | 2013 |
| **Azeeza Rangunwala** | **MMedSc**: “Identification of antigen-specific serological cross-reactivity among survivors of Crimean-Congo Haemorrhagic fever” | 2013 |
| **Shannon Lucrecia Smouse** | **MMedSc**: “Identification of antigenic regions and linear B cell epitopes on yellow fever virus” | 2013 |
| **Hermanus Albertus Hanekom** | **MMedSc**: “Development of detection assays for sindbus virus and investigating in vitro infection of mammalian cells” | 2013 |
| **Dominique Goedhals** | **PhD**: “Immune responses to Crimean-Congo haemorrhagic fever virus and molecular characterization of viral isolates” | 2014 |
| **Lehlohonolo Mathentheng** | **PhD**: “Immunogenicity and serological applications of flavivirus EFIII proteins and multiplex RT-PCR for detecting novel southern African viruses” | 2014 |
| **Natalie Viljoen** | **MMedSc**: “Preparation and immunogenicity of a candidate replicon based yellow fever vaccine” | 2014 |
| **Danelle Pieters** | **MMedSc**: “Development of molecular and serological assays for diagnosis and surveillance of Crimean-Congo haemorrhagic fever virus” | 2015 |
| **Tumelo Robert Sekee** | **MMedSc**: “Molecular assays for detecting human papillomavirus in head and neck squamous cell carcinoma” | 2016 |
| **Deborah Rethabile Damane** | **MMedSc**: “Preparation of recombinant antigen for serological detection of African hantaviruses” | 2017 |
| **Jan-G Vermeulen** | **PhD**: “Preparation and in vitro characterisation of an anti-Tissue factor single chain variable fragment” | 2017 |
| **Sabeehah Vawda** | **MMedSc**: “Seroepidemiologic survey of Crimean-Congo haemorrhagic fever virus amongst healthy individuals in select risk groups in South Africa” | 2018 |
| **Elisabeth Hendrika Bonnet** | **MMedSc**: “The development and validation of a reverse transcription recombinase polymerase amplification assay for detection of flaviviruses” | 2019 |
| **Atang Bulane** | **PhD**: “Detection of human papillomavirus associated with head and neck cancer in archived tissues and novel biomarkers” | 2019 |
| **Nicole Kennedy** | **MMedSc**: “Development of in house assays for detection of Sindbis virus infections” | 2019 |
| **Makgotso Golda Maotoana** | **MMedSc**: “Characterization of T cell responses to the non-structural proteins of the M segment in survivors of Crimean-Congo haemorrhagic fever” | 2019 |
| **Yuri Munsamy** | **PhD-** “Characterisation of the human papillomavirus genome and p53 mutations in head and neck squamous cell carcinomas” | 2019 |
| **Gert Ignatius du Preez Terblanche** | **MMedSc**: “Identification of arboviruses circulating in mosquito populations in the Bloemfontein area, South Africa” | 2019 |
| **Thomas Tipih** | **PhD**: “Immunogenicity of Sindbis based replicons for Crimean-Congo hemorrhagic fever virus” | 2019 |
| **Natalie Viljoen** | **PhD**: “Innate immune signalling induced by Crimean-Congo haemorrhagic fever virus proteins in vitro” | 2019 |
| **Matefo Millicent Litabe** | **MMedSc**: “In vitro immune responses to Sindbis virus” | 2020 |
| **Peter Mwangi** | **PhD**: “Molecular characterization of rotavirus strains from pre- and post-vaccine introduction in South Africa” | 2020 |
| **Corné Thuynsma** | **MMedSc**: “Genetic analysis of human papillomavirus type 11 isolates from patients with recurrent respiratory papillomatosis treated at Universitas Academic Hospital” | 2021 |
| **Cornelius Gerhardus van der Westhuizen** | **MMedSc**: “Zoonotic diseases in high-risk populations in the Free State province, South Africa” | 2021 |
| **Micah Dimaculangan** | **MMedSc**: “Development and application of molecular assays for mosquito-borne alphaviruses in South Africa” | 2021 |
| **Veerle Dermaux-Msimang**  University of Pretoria | **PhD**: “A One Health investigation of Rift Valley fever and Crimean-Congo haemorrhagic fever among animal workers and of biosecurity on livestock farms in central South Africa” | 2021 |
| **Siewert Christiaan Wiid** | **MMedSc**: “Molecular and serological evidence for the circulation of orthobunyaviruses and orthonairoviruses in South Africa” | 2022 |
| **Nosipho Zanele Masoto** | **MMedSc**: “Development of a rapid detection assay and screening of mosquitoes for arboviruses in South Africa” | 2022 |
| **Nyiko Given Maswanganyi** | **MMedSc**: “Expression of arbovirus antigens for preparing multiplex immunofluorescent platform for serology.” | 2023 |
| **Matefo Millicent Litabe** | **PhD**: “Adaptive immune response in COVID-19 patients and innate immune modulation of SARS-COV-2” | 2023 |

**Students graduated summary:**

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| --- | --- | --- | --- |
| **Academic Level** | **Year graduated** | **Number of students** | **Total number of students** |
| Honours / BTech | 2008 | 3 | 27 |
| 2009 | 2 |
| 2011 | 2 |
| 2012 | 2 |
| 2013 | 2 |
| 2014 | 2 |
| 2015 | 1 |
| 2017 | 1 |
| 2018 | 2 |
| 2019 | 2 |
| 2020 | 2 |
| 2021 | 2 |
| 2022 | 2 |
| 2023 | 2 |
| Masters | 2003 | 1 | 22 |
| 2011 | 1 |
| 2013 | 3 |
| 2014 | 1 |
| 2015 | 2 |
| 2016 | 1 |
| 2017 | 1 |
| 2018 | 1 |
| 2019 | 4 |
| 2020 | 1 |
| 2021 | 2 |
| 2022 | 3 |
| 2023 | 1 |
| Doctoral | 2014 | 2 | 10 |
| 2017 | 1 |
| 2019 | 4 |
| 2021 | 1 |
| 2022 | 1 |
| 2023 | 1 |

**Students currently being supervised:**

Honours: 1

Masters: 1

Doctoral: 4

Postdoctoral: 2

**Students currently being co-supervised**

Masters: 4

Doctoral: 2

## Academic expertise

***Ad hoc***: Frequent external examiner for the following institutions:

University of Cape Town, University of Pretoria, Rhodes University, Stellenbosch University, University of Witwatersrand, University of the North West, University of KwaZulu-Natal, University of Zambia

## Referee for international scientific journals

***Ad hoc:*** Frequent referee for following journals for publications on topics related to arboviruses and viral haemorrhagic fevers. Including but not limited to: Journal of Virological Methods, Emerging Infectious Diseases, Scandinavian Journal of Infectious Diseases, Antiviral Research, Future Virology, Vaccine, Clinical and Vaccine, Immunology Infection, Genetics and Evolution Clinical Microbiology and Infection, Expert Review of Anti-infective Therapy, The Lancet, The Lancet Infectious Diseases, Virus Research, Epidemiology and Infection

## Referee for granting bodies

***Ad hoc*:** Referee for applications for projects in the field of arbovirology, viral haemorrhagic fevers and medical virology for the following granting bodies:

The Medical Research Council (MRC), South Africa National Research Foundation, Wellcome Trust, National Health Laboratory Services Research Trust, Pasteur Institute

## Research grants awarded (2006 - )

* **2006:** Awarded two year research grant from the Polio Research Foundation (PRF). Title of research project: Genetic characterization of the M gene of southern African isolates of Crimean-Congo haemorrhagic fever virus
* **2006:** Awarded three year research grant from the PRF. Title of research project: Investigation to determine the presence of previously unidentified tick-borne viruses as human pathogens in Africa
* **2007:** Awarded an NHLS Research Trust grant to investigate human papilloma viruses in children with recurrent laryngeal papillomas.
* **2008:** Awarded an MRC three year grant to investigate T cell responses in survivors of CCHF
* **2008**: Co investigator on grant awarded by National Institutes for Health NIAID to investigate Rift Valley fever vaccines.
* **2008**: Awarded an NHLS Research Trust grant to investigate recombinant antigens for differentiation between tick borne and mosquito borne flaviviruses
* **2008-2010:** Awarded three year Major Impact research grant from the PRF. Title of research project: Host immune response in survivors of CCHF infection and evaluation of candidate vaccines.
* **2009:** Awarded research funding from the UFS Academic Cluster Funding for baculovirus expression of arboviral antigens
* **2009:** Awarded an NHLS Research Trust grant to investigate B cell epitopes, yellow fever virus
* **2010:** Awarded an NHLS Research Trust grant to investigate cytokine expression from Sindbis infected macrophages
* **2013:** awarded NHLS Research Trust grant to investigate novel assays for CCHFV
* **2013-2015:** awarded PRF research grant for developing stable cell lines
* **2013:** School of Medicine funding for hantavirus discovery
* **2012-2016** NRF incentive funding for rated researchers
* **2014-2016** NRF competitive funding for rated scientists, human papilloma viruses associated with head and neck cancers
* **2014** UFS interdisciplinary funding awarded for two projects, hantavirus studies and CCHF antigen preparation project.
* **2014**: NHLS Research Trust hantavirus project.
* **2015:** NHLS Research Trust, Pathology award, strategies for arbovirus vaccines
* **2015:** PRF research grant for CCHF studies
* **2015-2017:** NRF SA Sweden collaboration
* **2016-2020**: DST/NRF South African Research Chair Initiative, SARChI chair. Awarded at Tier 1 level.
* **2018-2020**: PRF research funding
* **2020**: awarded NHLS Research Trust Grant
* **2020**: awarded NHLS Pathology Grant
* **2020**: awarded Technology Innovation Agency, South Africa funding
* **2021-2025**: DST/NRF South African Research Chair Initiative, SARChI chair. Renewed and awarded at Tier 1 level.
* **2022-2024:** PRF research funding

## Publications in peer-reviewed journals (n = 104)

1. **Burt, F.J.,** Swanepoel, R., Braack, L.E.O. (1993) Enzyme-linked immunosorbent assays for the detection of antibody to Crimean-Congo haemorrhagic fever virus in the sera of livestock and wild vertebrates. *Epidemiology & Infection*; 111:547-557. doi: 10.1017/s0950268800057277.
2. **Burt, F.J.,** Leman, P.A., Abbott, J.C., Swanepoel, R. (1994) Serodiagnosis of Crimean-Congo haemorrhagic fever. *Epidemiology & Infection;* 113:551-562. doi: 10.1017/s0950268800068576.
3. **Muyembe, T., Kipasa, M. - on behalf of the International Scientific and Technical Committee and WHO Collaborating Centre for Haemorrhagic Fevers** (1995) Ebola haemorrhagic fever in Kikwit, Zaire. *Lancet*; 345:1448. doi: 10.1016/s0140-6736(95)92640-2
4. Swanepoel, R., Leman, P.A**., Burt, F.J.,** Zachariades, N.A., Braack, L.E.O., Ksiazek, T.G., et al. (1996) Experimental inoculation of plants and animals with Ebola virus. *Emerging Infectious Diseases*; 2:321-325. doi: 10.3201/eid0204.960407.
5. **Burt, F.J.,** Spencer, D.C., Leman, P.A., Patterson, B., Swanepoel, R. (1996) Investigation of tick-borne viruses as pathogens of humans in South Africa and evidence of Dugbe virus infection in a patient with prolonged thrombocytopenia. *Epidemiology & Infection*; 117:353-361. doi: 10.1017/s0950268800052687.
6. **Burt, F.J.,** Swanepoel, R., Shieh, W., Smith, J.F., Leman, P.A., Greer, et al. (1997) Immunohistochemical and in situ localization of Crimean-Congo hemorrhagic fever (CCHF) virus in human tissues and implications for CCHF pathogenesis. *Archives of Pathology & Laboratory Medicine*; 121:839-846.
7. Swanepoel, R., Leman, P.A., **Burt, F.J.,** Jardine, J., Verwoerd, D.J., Capua, I., et al. (1998) Experimental infection of ostriches with Crimean-Congo haemorrhagic fever virus. *Epidemiology & Infection*; 121:427-432. doi: 10.1017/s0950268898001344.
8. **Burt, F.J.**, Leman, P.A., Smith, J.F., Swanepoel, R. (1998) The use of a reverse transcription–polymerase chain reaction for the detection of viral nucleic acid in the diagnosis of Crimean–Congo haemorrhagic fever.  *Journal of Virological Methods*; 70:129-137. doi: 10.1016/s0166-0934(97)00182-1.
9. Ksiazek, T.G., Rollin, P.E., Williams, A.J., Bressler, D.S., Martin, M.L., Swanepoel, R., et al. (1999) Clinical *Virology* of Ebola Hemorrhagic Fever (EHF): Virus, Virus Antigen, and IgG and IgM Antibody Findings among EHF Patients in Kikwit, Democratic Republic of the Congo, 1995. *Journal of Infectious Diseases*; 179(Suppl 1):S177–87. doi: 10.1086/514321.
10. Tomori, O., Bertolli, J., Rollin, P.E., Fleerackers, Y., Guimard, Y., De Roo, A., et al. (1999) Serologic Survey among Hospital and Health Center Workers during the Ebola Hemorrhagic Fever Outbreak in Kikwit, Democratic Republic of the Congo, 1995. *Journal of Infectious Diseases*; 179(Suppl 1):S98–101. doi: 10.1086/514307.
11. Dunster, L., Dunster, M., Ofula, V.O., Beti, D., Kazooba-Voskamp, F., **Burt, F.J.**, et al. (2002) First documentation of human Crimean-Congo hemorrhagic fever, Kenya. *Emerging Infectious Diseases*; 8:1005-1006. doi: 10.3201/eid0809.010510
12. **Burt, F.J.**, Grobbelaar, A.A., Leman, P.A., Anthony, F., Gibson, G.V.F., Swanepoel, R. (2002) Phylogenetic relationships of southern African West Nile virus isolates. *Emerging Infectious Diseases*; 8:820-826. doi: 10.3201/eid0808.020027
13. Jupp, P.G., Kemp, A., Grobbelaar, A.A., Leman, P.A., **Burt, F.J.**, Alahmed, A.M., et al. (2002) The 2000 epidemic of Rift Valley fever in Saudi Arabia: mosquito vector studies. *Medical and Veterinary Entomology*; 16:245-252. doi: 10.1046/j.1365-2915.2002.00371.x
14. Paweska, J.T., **Burt, F.J.**, Anthony, F., Smith, S.J., Grobbelaar, A.A., Croft, J.E., et al. (2003) IgG-sandwich and IgM-capture enzyme-linked immunosorbent assay for the detection of antibody to Rift Valley fever virus in domestic ruminants.  *Journal of Virological Methods*; 113:103-112. doi: 10.1016/s0166-0934(03)00228-3
15. Onyango, C.O., Ofula, V.O., Sang, R.C., Konongoi, S.L., Sow, A., De Cock, K.M., et al. (2004) Yellow Fever Outbreak, Imatong, Southern Sudan. *Emerging Infectious Diseases*; 10:1063-1068. doi: 10.3201/eid1006.030738
16. Onyango, C.O., Grobbelaar, A.A., Gibson, G.V.F., Sang, R.C., Sow, A., Swanepoel, R., **Burt, F.J.** (2004) Yellow Fever Outbreak, Southern Sudan, 2003. *Emerging Infectious Diseases*; 10:1668-1670. doi: 10.3201/eid1009.030727.
17. Venter, M., Myers, T.G., Wilson, M.A., Kindt, T.J., Paweska, J.T., **Burt, F.J.**, et al. (2005) Gene expression in mice infected with West-Nile virus strains of different neurovirulence. *Virology*; 342:119-140. doi: 10.1016/j.virol.2005.07.013
18. **Burt, F.J.**, Swanepoel, R. (2005) Molecular epidemiology of African and Asian Crimean-Congo haemorrhagic fever isolates. *Epidemiology & Infection*; 133:659-666. doi:10.1017/S0950268805003730
19. Paweska, J.T., **Burt, F.J.**, Swanepoel, R. (2005) Validation of IgG-sandwich and IgM-capture ELISA for the detection of antibody to Rift Valley fever virus in humans.  *Journal of Virological Methods*; 124:173-181. doi: 10.1016/j.jviromet.2004.11.020
20. Bausch, D.G.; Nichol, S.T.; Muyembe-Tamfum, J.J.; Borchert, M.; Rollin, P.E.; Sleurs, H.; et al. (2006) Marburg hemorrhagic fever associated with multiple genetic lineages of virus. *New England Journal of Medicine*; 355:909-919. doi: 10.1056/NEJMoa051465
21. Swanepoel, R., Smit, S.B., Rollin, P.E., Formenty, P., Leman, P.A., Kemp, A., et al. (2007) Studies of reservoir hosts for Marburg virus. *Emerging Infectious Diseases*; 13:1847-1851. doi: 10.3201/eid1312.071115
22. Coetzee, P., Weyer, J., Paweska, J.T., **Burt, F.J.**, Markotter, W., Nel, L.H. (2008) Use of a molecular epidemiological database to track human rabies case histories in South Africa. *Epidemiology & Infection*; 136:1270-1276. doi: 10.1017/S0950268807009582
23. Heise, M.T., Whitmore, A., Thompson, J., Parsons, M., Grobbelaar, A.A., Kemp, A.,et al. (2009) An alphavirus replicon-derived candidate vaccine against Rift Valley fever virus. *Epidemiology & Infection*; 137:1309-1318. doi: 10.1017/S0950268808001696
24. Venter, M., **Burt, F.J.**, Blumberg, L., Fickl, H., Paweska, J.T., Swanepoel, R. (2009) Cytokine Induction after Laboratory-Acquired West Nile Virus Infection. *New England Journal of Medicine*; 360:1260-1262. doi: 10.1056/NEJMc0808647.
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## Significant recent international and national conferences and workshops (2005- )

* Oral presentation. Studies of Crimean-Congo haemorrhagic fever. Mini colloquium. 21 July 2005. Rocky Mountain Laboratories, NIAID, Hamilton, Montana.
* Poster presentation: Molecular epidemiology of African and Asian Crimean-Congo haemorrhagic fever isolates. XIII International Congress of Virology, San Francisco, July 2005
* Oral presentation. M. Heise, A. Whitmore1, J. Thompson1, J. Paweska, K. Madric1, L. White1, R. Swanepoel, F. Burt. An alphavirus replicon derived candidate vaccine against Rift Valley fever virus. International Meeting on Emerging Diseases and Surveillance. Austria, 23-25 Feb 2007.
* Speaker at the Tick-borne Flavivirus Research Symposium, Rocky Mountain Laboratories, Hamilton, Montana, US, 14-16 October 2007. Tick borne viruses as human pathogens in South Africa.
* Oral and poster presentations: XIV International Congress of Virology, Turkey, Aug 2008.
* Three poster presentations at the International Infectious Diseases Conference, Miami, Mar 2010. Presented by postgraduate students. Codon optimization of CCHF viral nucleoprotein gene (Samudzi and Burt); Preparation of antigenically active yellow fever viral envelop domain III protein (Smouse and Burt); Multiplex RT-PCR for detection and differentiation of mosquito and tick-borne flaviviruses (Mathengtheng, Samudzi and Burt).
* Attended and presented ArboZoonet, Morocco 2010, France 2011
* Invited speaker CCH-Fever and Arbo-Zoonet Joint course on Diagnostic Tuesday 4th September 2012 University Medical Center Göttingen, Department of Virology Göttingen. Serological detection of Crimean-Congo haemorrhagic fever virus. Presented at CCHFV workshop ArboZoonet, Germany 2012.
* Poster presentation at the International Meeting on Emerging Disease (IMED), “Immune responses against an alpha virus replicon derived candidate vaccine against Crimean-Congo haemorrhagic fever virus” in Vienna, Austria on 1-3 November 2014.
* Invited speaker, Oral presentation at First International Conference on Crimean-Congo haemorrhagic fever virus. “34 years of Crimean-Congo haemorrhagic fever in South Africa.” Greece 13-14 Feb 2015.
* Co-author on numerous poster presentation at the Pathology Research and Development Congress (PATHRED) at Emperors Palace in Johannesburg on 15-16 April 2015.
* Oral presentation at “WAKA HPV Africa Symposium” at Southern Sun OR Tambo, Johannesburg, S.A. 28-29 May 2015. “Detection of human papilloma virus in head and neck squamous cell carcinomas.”
* Poster presentations at Virology Africa, Cape Town, 1-3 Dec 2015.
* Presentation at NRF STINT SA-Sweden kickoff workshop, Stockholm, 10 February 2016.
* Organised workshop titled: “Development of diagnostics and therapeutics for CCHFV 2018” during 6-7 Dec 2018 at the University of the Free State. This was attended by Prof A Mirazimi and 2 post-doctoral fellows from the Karolinska Institut in Sweden, 2 visiting scientists from the National University of Singapore, 1 visiting scientist from the University of Copenhagen, 8 post graduate students, one post-doctoral fellow and 4 staff members of the Division of Virology; many of whom presented and shared their expertise in the respective fields.
* Organised workshop titled: “Crimean-Congo haemorrhagic fever: detection diagnosis and tick vectors workshop” during 3-4 Dec 2019 at the University of the Free State. The workshop was presented by Mr Deon Bakkes and Miss Dikeledi Matloa from the Agricultural Research Council, Johannesburg. This was attended by Prof A Mirazimi from the Karolinska Institut in Sweden and a group of 11 which consisted of post graduate students, post-doctoral fellows and staff members of the Division of Virology and the Department of Zoology and Entomology from the University of the Free State.

**Contribution towards research on Crimean-Congo haemorrhagic fever virus in Africa:**

**CCHFV Africa 2023 Conference, a platform for African researchers**

The CCHFV Africa 2023 conference was conceptualised, organised and hosted by Professor Felicity Burt from the Division of Virology at the University of the Free State and NHLS and Professor Ali Mirazimi from the Department of Laboratory Medicine at Karolinska Institut, the Public Health Agency and National Veterinary Institute, Sweden. Professor Burt and Professor Mirazimi have collaborated for many years on Crimean-Congo haemorrhagic fever virus (CCHFV) and conceived the idea to host a conference which allowed participants from low resource countries in Africa to attend.

CCHFV is a tick-borne zoonosis found in Africa, Asia, eastern and southern Europe, the Balkans and the Middle East. The virus is listed as one of the priority pathogens for research and vaccine development by the World Health Organization due to significant public health implications and the absence of efficacious treatment. The distribution of CCHFV correlates with that of the primary vector of the virus, ticks belonging to the genu*s Hyalomma*. The distribution of these ticks has, in recent years, expanded to regions where conditions are favourable for the species to establish endemnicity. Hence there is growing concern that this virus has the potential to emerge and spread to new geographic regions.

The CCHFV Africa 2023 conference was the first of its kind with an aim to create a platform for African researchers to showcase their research and interact with colleagues to establish collaborations and open communication to further the preparedness capacity for CCHF outbreaks in Africa. The meeting would not have been possible without the support from the Defence Threat Reduction Agency (DTRA) who partnered with the UFS in supporting CCHF research and biosurveillance efforts in South Africa, the Region and the African Continent. The conference, held on 3-4 May 2023 in Cape Town, was attended by participants from 16 countries which included 12 countries in Africa, and participants from the United States, Sweden, Turkey and France. African countries that were represented included South Africa, Uganda, Kenya, Tanzania, Cameroon, Mozambique, Tunisia, Central Africa Republic, Senegal, Benin Republic, Burkina Faso and Gabon. In addition representatives from DTRA and the European Research Infrastructure on Highly Pathogenic Agents (erinha) attended the meeting. Oral presentations provided evidence of the virus circulating in multiple countries with potential to cause human infections. The presence of this virus emphasizes the urgent need to build diagnostic and surveillance capacity for CCHFV and other arboviral disease with potential to cause outbreaks throughout Africa.

**One outcome was the establishment of a CCHFV Africa Committee chaired by Prof Burt and comprised of 15 members representing 12 countries in Africa and providing a platform for sharing and discussing CCHFV research.**

## Productivity and impact of published work (rating and h-indexes accessed 04 October 2024)

**NRF rating for 2024-2028: B1**

Productivity and impact of published work (h-indexes as on 04 October 2024):

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Web of Science (ISI): | 34 | Scopus | 36 | Google Scholar: | 42 |

The total number of citations retrieved from Scopus from 1993 to 2023 are 5057 (retrieved 04 October 2024).

## Other interests

Horse riding

Gardening and garden design

Nature and the environment

Walking, jogging and hiking

## Referees

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