# CURRICULUM VITAE

Surname: **Fehrsen**

Name: Jeanni

Division: Immunology Division

Nationality: South African

ID: 6702180128089

Marital status: Married

Sex: Female

Date of birth: 18 February 1967

Language proficiency: English, Afrikaans

**Qualifications:**

B Sc, 1987, University of Cape Town

B Sc (Hons, Microbiology), 1988, University of Cape Town

M Sc (Microbiology), 1994, University of the Witwatersrand

‘A comparison of antigenic proteins in different Anaplasma isolates.’

Ph D (Microbiology), 2003, Rhodes University

‘Isolation of antigenic peptides of *Cowdria ruminantium* and their encoding genes using a genome-derived phage display library.’

**Academic and professional experience.**

* Employed from 1989 as a Researcher at Onderstepoort Veterinary Institute, first in the Molecular Biology Division and since 2000 in the Immunology Division.
* July to October 1992 - Worked in the Biology Department, Imperial College, London, UK.
* July 2005 - current. Appointed as an extraordinary lecturer at the Department of Tropical Veterinary Science, University of Pretoria.
* Supervised four MSc students and co-supervised one MSc and one PhD student.

**Research experience:**

*Babesia* diagnostics using DNA probes. In vitro cultivation of *Babesia* in red blood cells.

Comparisons of antigenic proteins of different *Anaplasma* isolates, using metabolic labelling and immunological techniques.

Molecular Biology of *Cowdria*: manipulation of genomic and expression libraries of *Cowdria*, using DNA and RNA probes, immunological techniques and DNA sequencing.

Phage display techniques to identify *Cowdria* epitopes and viral protein epitopes.

Panning of recombinant antibody libraries on *Cowdria* organisms, immunoblotted and recombinant proteins.

Construction and screening of immune recombinant antibody libraries.

Cloning and expression of recombinant proteins.

BIAcore analysis on recombinant antibodies and training for clients.

Developing methods to improve affinity and/or stability of recombinant antibodies.

Bioinformatic skills: sequence analyses, primer design, gene identification, epitope mapping.

Develop ELISAs incorporating recombinant scFvs. Establish techniques to analyse the antibodyome of immuninsed animals.

**Publications:**

1. Clift, SJ, Martí-Garcia, B, Phaswane, RM, Mitchell, EP, Josemans, AI, Vorster, I, Koeppel, KN, Fehrsen, J. 2021. Polyclonal antibody–based immunohistochemical detection of intraleukocytic Theileria parasites in roan and sable antelopes. *Journal of Veterinary Diagnostic Investigation*. 1-10. [https://doi.org/10.1177/10406387211033272](https://protect-za.mimecast.com/s/94qUCBgpvjt7qGOzI6KbQQ?domain=doi.org)
2. Chitray, M, Opperman, PA, Rotherham, L, Fehrsen, J, van Wyngaardt, W, Frischmuth, J, Rieder, E, Maree, FF. 2020. Diagnostic and epitope mapping potential of single-chain antibody fragments against foot-and-mouth disease virus serotypes A, SAT1 and SAT3. Front. Vet. Sci. 7: 475. [doi.org/10.3389/fvets.2020.00475](https://doi.org/10.3389/fvets.2020.00475)
3. Ranchod, H., Ndlandla, F., Lemmer, Y., Beukes, M., Niebuhr, J., Al-Dulayymi, J., Wemmer, S., **Fehrsen, J.,** Baird, M. & Verschoor, J. 2018. The antigenicity and cholesteroid nature of mycolic acids determined by recombinant chicken antibodies. PLoS ONE 13(8): e0200298. [doi.org/10.1371/journal.pone.0200298](https://doi.org/10.1371/journal.pone.0200298)
4. **Fehrsen,** J, Wemmer, S & van Wyngaardt, W. 2017. Construction of Chicken Antibody Libraries. in Methods Molecular Biology, Vol. 1701, Michael Hust and Theam Soon Lim (Eds): Phage Display.

 1701:189-203. doi: 10.1007/978-1-4939-7447-4\_10.

1. Mathebula, E.M., Faber, F.E., Van Wyngaardt, W., Van Schalkwyk, A., Pretorius, A. & **Fehrsen, J**., 2017, ‘B-cell epitopes of African horse sickness virus serotype 4 recognised by immune horse sera’, *Onderstepoort Journal of Veterinary Research* 84(1), a1313. https://doi.org/ 10.4102/ojvr.v84i1.1313
2. Abolnik, C, **Fehrsen, J**, Olivier, A, van Wyngaardt, W, Fosgate, G & Ellis, C. 2013. Serological investigation of highly pathogenic avian influenza (HPAI) H5N2 in ostriches (Struthio camelus). Avian Pathology. DOI:10.1080/03079457.2013.779637. impact factor 1.7
3. van Wyngaardt, W, Mashau, C, Wright, I, **Fehrsen, J.** 2013. Serotype- and serogroup-specific detection of African horsesickness virus using phage displayed chicken scFvs for indirect double antibody sandwich ELISAs.J. Vet. Sci. 14(1), 95-98. <http://dx.doi.org/10.4142/jvs.2013.14.1.95>. impact factor 1.16
4. Sixholo, J., van Wyngaardt, W., Mashau, C., Frischmuth, J., Du Plessis, D.H. and **Fehrsen, J.** 2011. Improving the characteristics of a mycobacterial 16kDa-specific chicken scFv. Biologicals. 39,110-116. doi:10.1016/j.biologicals.2011.01.007. impact factor 1.774
5. Rakabe, M., Van Wyngaardt, W. and **Fehrsen, J**. 2011. Chicken single-chain antibody fragments directed against recombinant VP7 of bluetongue virus. Food and Agricultural Immunology. 1-13, iFirst article. DOI: 10.1080/09540105.2011.575122. impact factor 0.6
6. Wemmer, S., Mashau, C., **Fehrsen, J**., Wyngaardt, W. and du Plessis, D.H., 2010. Chicken scFvs and bivalent scFv-CH fusions directed against HSP65 of *Mycobacterium bovis*. Biologicals. 38, 407-414. [doi:10.1016/j.biologicals.2010.02.002](http://0-dx.doi.org.innopac.up.ac.za/10.1016/j.biologicals.2010.02.002). impact factor 1.774
7. **Fehrsen, J**., van Wyngaardt, W., Mashau, C., Potgieter, C., Chaudhary, V.K., Gupta,A., Jordaan, F. and du Plessis, D.H., 2005. Serogroup-reactive and type-specific detection of bluetongue virus antibodies using chicken scFvs in inhibition ELISAs. Journal of Virological Methods. 129(1), 31-9. impact factor 2.139
8. Van Wyngaardt W, Malatji T, Mashau C, **Fehrsen J**, Jordaan F, Miltiadou DR, Du Plessis DH. A large semi-synthetic single-chain Fv phage display library based on chicken immunoglobulin genes. BMC Biotechnol. 2004 Apr 1;4(1):6. Epub 2004 Apr 01. impact factor 2.86
9. Bentley, L., **Fehrsen, J**., Jordaan, F., Huismans, H. and du Plessis, D. H., 2000. Identification of antigenic regions on VP2 of African horsesickness virus serotype 3 using phage displayed epitope libraries. Journal of General Virology. 81,993-1000. impact factor 3.568
10. **Fehrsen, J**. and du Plessis, D.H. 1999. Cross-reactive epitope mimics in a fragmented-genome library derived from the rickettsia, *Cowdria ruminantium*. Immunotechnology. 4,175-184. impact factor 2.34
11. Brayton, K. A., deVilliers, E. P., **Fehrsen, J**., Nxomani, C., Collins, N.E. and Allsopp, B. A. 1999. *Cowdria ruminantium* DNA is unstable in a SuperCos1 library. Onderstepoort Journal of Veterinary Research. 66,111-117. impact factor 0.35