

## BIOGRAPHICAL SKETCH

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NAME Bekker, Adrie		POSITION TITLE Consultant in Neonatology, Department of Paediatrics	
eRA COMMONS USER NAME (credential, e.g., agency login) adrie			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)</i>			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	Field of Study
Orange Free State University	MBChB	1997	Medical Degree
College of Medicine of South Africa	DCH	1999	Pediatrics
College of Medicine of South Africa	FCP(Peads)	2004	Pediatrics
Stellenbosch University	MMed	2005	Pediatrics
Katholieke Universiteit Leuven, Belgium		2005	Fellowship in Neonatology
College of Medicine of South Africa	Cert (Neo)	2008	Neonatology
Stellenbosch University (DTTC)	PhD	2016	Pediatrics

### A. Personal Statement

I am an Associate Professor in Neonatology at the Department of Paediatrics and Child Health, University of Stellenbosch. I have received a national research foundation (NRF) C3 rating in 2015 for my research outputs in the area of neonatal infectious diseases and in 2016 I completed my PhD, titled, "Prevention and treatment of perinatal and infant TB in the HIV era". I am currently vice-chair on an NIH-funded IMPAACT P1106 study investigating the pharmacokinetics of TB and antiretroviral drugs in low birth weight infants. In 2017, I was awarded a 2-year international CIPHER IAS fellowship (Growing the Leaders of Tomorrow) to advance my statistical and pharmacology skills related to pharmacokinetic research in HIV-infected and exposed newborns. Since 2018, I have broadened my research focus to include bacterial infections in neonates and I am currently collaborating with GARDP/DNDi on a NeoAMR global neonatal sepsis study.

### B. Positions and Honors

2017 – current: Associate Professor, Tygerberg Children's Hospital, Stellenbosch University, SA  
2007 - 2017: Senior Consultant Neonatology, Tygerberg Children's Hospital, Stellenbosch University, SA  
2005 – 2007: Consultant Neonatology, Groote Schuur Hospital, Cape Town University, SA  
2004 – 2005: Fellowship in Neonatology, Katholieke Universiteit Leuven, Belgium  
2001 – 2004: Paediatric Registrar, Tygerberg Children's Hospital, Stellenbosch University, SA  
2000 – 2001: Resident Medical Officer, Bupa Dunedin Hospital and The Hampshire Clinic, UK  
Senior House Officer, Paediatric Department, Staffordshire General Hospital, UK  
1999 – 2000: Community Service Medical Officer, Ngwelezana, Empangeni Hospital Complex, KZN, SA  
1998 – 1999: Medical Intern, Universitas and Pelenomi Academic Hospital Complex, Bloemfontein, SA

## Scholarships and awards

- 2017: International CIPHER IAS fellowship (Growing the Leaders of Tomorrow)  
2015: NRF C3 rating  
2015: HD Brede medal award: Best TB research paper amongst post-graduate students at Stellenbosch University, Faculty of Medicine and Health Sciences  
2014: PhD Scholarships awarded: Discovery Academic Award; MRC Clinician Researcher Programme and the SAMA PhD merit award  
2010-current: Research Fellow, Desmond Tutu TB Centre, Department of Paediatrics and Child Health, Stellenbosch University, South Africa  
2010: Mini Fellowship in Paediatric Infectious Diseases, Children's Hospital Denver, Colorado, USA

## Leadership and service

- 2017: Paediatric HIV Advisory Board for ViiV  
2017 - current: University of Stellenbosch Human Resource Ethics Committee  
2017 - current: Academic Year Day organiser  
2016 - current: IMPAACT p1106 co-chair; IMPAACT protocol investigator for p1026s and p1110  
2015 – current: The UNION – Maternal Child working group – co-chair  
2015 – current: CDC: Tuberculosis Trials Consortium (TBTC) TB and Pregnancy Working Group  
2014 – 2016: USANA (United South African Neonatal Association) - secretary

## C. Peer-reviewed Publications

### Publication outputs

#### First Author

1. **Bekker A**, Schaaf HS, Draper HR, Kriel M, Hesselning, AC. Tuberculosis disease during pregnancy and treatment outcomes in HIV-infected and uninfected women at a referral hospital in Cape Town. PLoS One. 2016 Nov 3;11(11):e0164249. doi: 10.1371/journal.pone.0164249.
2. **Bekker A**, Schaaf HS, Draper HR, van der Laan L, Murray S, Wiesner L, Donald PR, McIlleron HM, Hesselning AC. Pharmacokinetics of Rifampin, Isoniazid, Pyrazinamide, and Ethambutol in Infants Dosed According to Revised WHO-Recommended Treatment Guidelines. Antimicrob Agents Chemother. 2016 Mar 25;60(4):2171-9. doi: 10.1128/AAC.02600-15. Print 2016 Apr. PMID: 26810651
3. **Bekker A**. Tuberculosis in pregnancy within the context of HIV. HIV Nursing Matters. 2015 Mar 6(1); 24-27. (journal not indexed)
4. **Bekker A**, Slogrove AL, Schaaf HS, Du Preez K, Hesselning AC. Determinants of tuberculosis treatment completion among newborns in a high-burden setting. Int J Tuberc Lung Dis. 2014 Mar;18(3):335-40. doi: 10.5588/ijtld.13.0506.
5. **Bekker A**, Schaaf HS, Seifart HI, Draper HR, Werely CJ, Cotton MF, Hesselning AC. The pharmacokinetics of isoniazid in low birth weight and premature infants. Antimicrob Agents Chemother. 2014;58(4); 2229 – 2234.
6. **Bekker A**, Goussard P, Gie R, Andronikou S. Congenital anterior mediastinal teratoma causing severe airway compression in a neonate. BMJ Case Rep. 2013 Sep 26;2013.
7. **Bekker A**, Du Preez K, Schaaf HS, Cotton MF, Hesselning AC. High tuberculosis exposure among neonates in a high tuberculosis and human immunodeficiency virus burden setting. Int J Tuberc Lung

Dis. 2012 Aug;16(8):1040-6. Epub 2012 Jun 12.

8. **Bekker A**, Smith J, Moore SW, Pieper CH, Sidler D, Maritz JS. Predictors of survival in infants with congenital diaphragmatic Hernia-systemic oxygenation status versus dynamic compliance of the respiratory system. *South African Child Health Journal Child Health*. 2007; 1 68 – 72.

#### Co-author:

1. Zenhäusern J, **Bekker A**, Wates M, Schaaf HS, Dramowski A. Tuberculosis transmission in a hospitalized neonate: need for optimized tuberculosis screening of pregnant and post-partum women. *S Afr Med J*. (accepted for publication 2018)
2. Dramowski A, Lloyd LG, **Bekker A**, Holgate S, Aucamp M, Reddy K, Finlayson H. Neonatal listeriosis during a countrywide epidemic: a tertiary hospital's experience. *S Afr Med J*. 2018;108(10):818-827
3. Frigati L, **Bekker A**, Stroebele S, Goussard P, Schaaf HS. Culture-confirmed tuberculosis in South African infants less than 3 months of age: clinical presentation and management of respiratory complications. *Pediatr Infect Dis J*. 2018 Aug 27. doi: 10.1097/INF.0000000000002163
4. Daskapan A, Idrus LR, Postma MJ, Wilffert B, Kosterink JGW, Stienstra Y, Touw DJ, Andersen AB, **Bekker A**, Denti P, Hemanth Kumar AK, Jeremiah K, Kwara A, McIlleron H, Meintjes G, van Oosterhout JJ, Ramachandran G, Rockwood N, Wilkinson RJ, van der Werf TS, Alffenaar JC. A Systematic Review on the Effect of HIV Infection on the Pharmacokinetics of First-Line Tuberculosis Drugs. *Clin Pharmacokinet*. 2018 Nov 8. doi: 10.1007/s40262-018-0716-8
5. LaCourse SM, Cranmer LM, **Bekker A**, Steingart KR, Black D, Horne DJ, Oren E, Pals S, Modi S, Mathad J. Symptom screening for active tuberculosis in pregnant women living with HIV. *Cochrane Database Syst Rev*. 2018;2018(1). pii: CD012934. doi: 10.1002/14651858.CD012934.
6. Geldenhuys C, Dramowski A, Jenkins A, **Bekker A**. Central-line-associated bloodstream infections in a resource-limited South African neonatal intensive care unit. *S Afr Med J*. 2017 Aug 25;107(9):758-762. doi: 10.7196/SAMJ.2017.v107i9.12124
7. Dramowski A, Aucamp M, **Bekker A**, Mehtar S. Infectious disease exposures and outbreaks at a South African neonatal unit with review of neonatal outbreak epidemiology in Africa. *Int J Infect Dis*. 2017 Apr;57:79-85. doi: 10.1016/j.ijid.2017.01.026
8. McIlleron H, Hundt H, Smythe W, **Bekker A**, Winckler J, van der Laan L, Smith P, Zar HJ, Hesseling AC, Maartens G, Wiesner L, van Rie A. Bioavailability of two licensed paediatric rifampicin suspensions: implications for quality control programmes. *Int J Tuberc Lung Dis*. 2016 Jul;20(7):915-9. doi: 10.5588/ijtld.15.0833. PMID: 27287644
9. Dramowski A, Madide A, **Bekker A**. Neonatal nosocomial bloodstream infections at a referral hospital in a middle-income country: burden, pathogens, antimicrobial resistance and mortality. *Paediatr Int Child Health*. 2015 May 4:2046905515Y0000000029. [Epub ahead of print] PMID: 25940506
10. Morkel G, **Bekker A**, Marais BJ, Kirsten G, Van Wyk J, Dramowski A. Bloodstream infections and antimicrobial resistance patterns in a South African neonatal intensive care unit. *Paediatrics and International Child Health* 2014; 34(2): 108-114.
11. Van der Merwe SK, Freeman N, **Bekker A**, Harvey J, Smith J. Prevalence of and risk factors for retinopathy of prematurity in a cohort of preterm infants treated exclusively with non-invasive ventilation in the first week after birth. *S Afr Med J*. 2013 Jan 14;103(2):96-100. doi: 10.7196/samj.6131.
12. Kirsten GF, Kirsten CL, Henning PA, Smith J, Holgate SL, **Bekker A**, Kali GT, Harvey J. The Outcome of ELBW Infants Treated With NCPAP and InSurE in a Resource-Limited Institution. *Pediatrics*. 2012 Apr;129(4):e952-9. Epub 2012 Mar 19.
13. Holgate SL, **Bekker A**, Rabie H, Cotton MF. Oseltamivir Use in Low-Birth Weight Infants During the 2009 nH1N1 Influenza A Outbreak in the Western Cape, South Africa. *J Trop Pediatr*. 2012 Apr;58(2):102-6. Epub 2011 Jun 7.
14. Dramowski A, **Bekker A**, Kirsten G, Marais BJ, Rabie H, Cotton MF. A case of congenital measles during the 2010 South African epidemic. *Ann Trop Paediatr*. 2011;31(2):185-8.

15. Orth H, Salaam-Dreyer Z, Kirsten G, **Bekker A**, Gqada Z, Wasserman E. Emergence of reduced susceptibility to glycopeptides in a *Staphylococcus aureus* strain causing infection in a neonate: case study. *Southern African Journal of Epidemiology and Infection*. 2011 26(3):107-108
16. Schaaf HS, Collins A, **Bekker A**, Davies PDO. Tuberculosis at extremes of age. *Respirology* 2010;15:747-763. Doi: 10.1111/j.1440-1843.2010.01784.x [Epub ahead of print Jun 4]
17. Horn A, Thompson C, Woods D, Nel A, **Bekker A**, Rhoda N, Pieper C. Induced hypothermia for infants with hypoxic- ischemic encephalopathy using a servo-controlled fan: an exploratory pilot study. *Pediatrics*. 2009 Jun;123(6):e1090-8
18. Rinaldi M, Brierley E, **Bekker A**. Donor breastmilk saved infant lives during an outbreak of rotavirus in South Africa. *Breastfeed Med*. 2009 Jun;4(2):133-4

## Handbook Chapters

1. **Bekker A**. "Tuberculosis in neonates and infants" pages 231-243, *Handbook of Child and Adolescent Tuberculosis* edited by Jeffrey R. Starke and Peter R. Donald, 2016, Oxford University Press.

## Conference outputs

### *International*

1. **Bekker A**, Hanan N, Cababasay M, Wang J, Nakwa F, Smith, E, Moye J, Violari A, Cotton M, Wiesner W, Norman J, Fourie B, Capparelli E, Mirochnick M, IMPAACT P1106 team. Pharmacokinetics and Safety of lopinavir/ritonavir solution in HIV-infected newborns. Conference on Retroviruses and Opportunistic Infections (CROI), 4-7 March 2018, Boston, Massachusetts
2. **Bekker A**, Violari A, Cababasay M, Wang J, Wiesner L, Capparelli E, Cotton M, Nakwa F, Mirochnick M, IMPAACT P1106 team. Pharmacokinetics of nevirapine prophylaxis in HIV-exposed low birth weight infants. Conference on Retroviruses and Opportunistic Infections (CROI), 13-16 February 2017, Seattle, Washington
3. **Bekker A**, Gupta A. Managing tuberculosis in pregnant women and newborns. 48<sup>th</sup> Union World Conference on Lung Health, 11-14 October 2017, Guadalajara, Mexico
4. Denti P, Gonzalez-Martinez C, Winckler J, **Bekker A**, Zar H, Davies G, van Rie A, McIlleron H, DATiC study team. Pharmacokinetics of rifampicin in African children: evaluation of the new WHO dosing guidelines. 48<sup>th</sup> Union World Conference on Lung Health, 11-14 October 2017, Guadalajara, Mexico
5. LaCourse S, Cranmer L, **Bekker A**, Steingart K, Black D, Horne DJ, Oren E, Pals S, Modi S, Mathad J. Symptom screening for active TB in pregnant women living with HIV: a systematic review. 48<sup>th</sup> Union World Conference on Lung Health, 11-14 October 2017, Guadalajara, Mexico
6. Van Schalkwyk M, **Bekker A**, Decloedt E, Theron GB, Cotton MF, Best B, Capparelli E, Stek A, Wang J, Mirochnick M, P1026s Protocol Team. Pharmacokinetics of Rifampicin and Isoniazid during pregnancy and postpartum in South African women. 9th IAS Conference on HIV Science, 23-26 July 2017, Paris, France
7. **Bekker A**, The pharmacokinetics and treatment of first line TB drugs for infants. 46<sup>th</sup> Union World Conference on Lung Health, 2-6 December 2015, Cape Town, South Africa
8. **Bekker A**, Schaaf HS, Draper H, Kriel D, Walzl G, Hesselning AC. Tuberculosis disease spectrum and treatment outcome amongst HIV-infected and HIV-uninfected pregnant women. 45<sup>th</sup> Union World Conference on Lung Health, 28 October -1 November 2014, Barcelona Spain
9. **Bekker A**, Slogrove A, Schaaf HS, du Preez K, Hesselning A. Barriers to care preventing tuberculosis-exposed newborns from completing therapy. 44<sup>th</sup> Union World Conference on Lung Health, 30 October-3 November 2013, Paris, France
10. **Bekker A**, Schaaf HS, Seifart HI, Werely CJ, Cotton MF, Hesselning AC. Tuberculosis treatment considerations for neonates and infants. 43<sup>rd</sup> Union World Lung Health Conference 13-17 November 2012, Kuala Lumpur, Malaysia

## National

1. **Bekker A.** Management of TB in neonates and young infants. 7<sup>th</sup> FIDSSA Congress, 9-11 November 2017, Cape Town, South Africa
2. Singh S, **Bekker A**, Newton- Foot M, Hoffmann R. Early-onset neonatal *Streptococcus gallolyticus subsp. pasteurianus* meningitis and septicaemia. 7<sup>th</sup> FIDSSA Congress, 9-11 November 2017, Cape Town, South Africa
3. **Bekker A.** Pharmacokinetics of TB and HIV drugs in newborns. 3<sup>rd</sup> USANA conference, 15-17 September 2017, Johannesburg, SA
4. **Bekker A**, Schaaf HS, Kriel M, Walzl G, Slogrove A, Draper HR, Hesselning AC. TB disease spectrum and treatment outcome of amongst HIV infected and uninfected women, Cape Town, South Africa. South African Pediatric Association (SAPA) conference, 10-14 September 2014, Cape Town, South Africa
5. **Bekker A**, Schaaf HS, Seifart HI, Werely CJ, Cotton MF, Hesselning AC. Isoniazid pharmacokinetics in low birth weight infants in South Africa, in the HIV era. 5<sup>th</sup> FIDSSA Congress 10-12 October 2013, Champagne Sports Resort, Drakensburg, South Africa
6. **Bekker A**, Du Preez K, Schaaf HS, Cotton MF, Hesselning AC. Management of low birth weight neonates with tuberculosis exposure in a setting with high HIV prevalence. 4<sup>th</sup> FIDSSA Congress, 8-11 September 2011, Durban, South Africa

## D. Research Support

1. **Name:** NeoOBS **co-PI:** A Bekker **Date:** 2018 - current
2. **Name:** CIPHER IAS Fellowship - Growing the leaders of Tomorrow **PI:** A Bekker **Date:** 2017 - current
3. **Name:** IMPAACT P1106  
“ Pharmacokinetic characteristics of antiretrovirals and tuberculosis medicines in low birth weight infants ” **PI:** MF Cotton **Date:** 2015- 2016
4. **Name:** TB ALLIANCE S003410  
“Pharmacokinetics in first-line TB drugs in infants.” **PI:** AC Hesselning **Date:** 2014-2015
5. **Name:** Early Career Award – Thrasher Foundation **PI:** A. Bekker **Date:** 2010-2012  
“Pharmacokinetics of INH in HIV-exposed and unexposed low-birth weight South African infants.
6. **Name:** TB Operational Research grant (TREAT TB): **PI:** N. Beyers **Date:** 2010-2012  
International Union against Tuberculosis and Lung Diseases GHN-A-00-08-00004-00  
“A health systems assessment of Isoniazid Preventative Therapy (IPT) delivery to TB-exposed newborns in the Western Cape Province, South Africa.”
7. **Name:** IMPAACT projects **PI:** MF Cotton **Date:** 2010  
NIH Stellenbosch University Clinical Trial Unit – 5U01AI069521-04  
Mini- fellowship in Pediatric Infectious Diseases: Children’s Hospital Denver, Colorado, USA