

CITATION

Professor Linda-Gail Bekker, Desmond Tutu HIV Centre, Institute of Infectious Disease and Molecular Medicine & Department of Medicine

Professor Linda-Gail Bekker is an outstanding South African physician-scientist who has made major contributions to the prevention and treatment of HIV and tuberculosis (TB). As deputy director, she co-leads the Desmond Tutu HIV Centre (DTHC) at the University of Cape Town (UCT) with her husband and scientific collaborator, Professor Robin Wood. She is also the Chief Operations Officer and Director of the Desmond Tutu Health Foundation (DTHF), a thriving public benefit organisation which supports the communities in which research is conducted. Bekker is a Professor of Medicine at UCT and served as President-Elect of President of the International AIDS Society from 2014-2016, and then as President from 2016-2018. Professor Bekker has published 471 peer-reviewed journal articles that have garnered over 32000 citations, several of which are in top-tier journals including *Science*, *Lancet*, *Lancet HIV*, *New England Journal of Medicine*, and *Journal of Infectious Diseases*. Her overall *h*-index on Google Scholar is 90 and her *i10*-index is 344.

Bekker's body of published work spans from hypothesis-driven, to clinical and health service research. Bekker's work on HIV-associated TB grew out of her doctoral studies with Gilla Kaplan (Rockefeller and PHRI) on the immunopathogenesis of TB (**#1, 364 citations**) and highly productive collaborations with the late Stephen Lawn from the London School of Hygiene and Tropical Medicine (**#2, 692 citations**), and UCT collaborators including Landon Myer and Keren Middelkoop (**#3, 326 citations; #4, 70 citations**). This work also reflects a long-standing collaboration with Barry Kreiswirth (Public Health Research Institute, NJ) on TB epidemiology and strain variation which has resulted in >40 co-authored papers (**#5, 84 citations**). Other talented collaborators joined Bekker and her internationally recognised UCT team to make use of their field sites including Tom Harrison (St. Georges, London) who performed seminal work with Bekker and others, including Graeme Meintjes (UCT), on cryptococcal coinfection (**#6, 307 citations**). This and other international collaborations have led to >11 further joint publications. Most recently, Bekker collaborated with colleagues at the South African TB Vaccine Initiative (UCT) on a study that has significant implications for the clinical development of new TB vaccine candidates (**#7, 186 citations; #8, 1 citation**).

Recognising that individuals were accessing treatment late with consequent additional morbidity and mortality led Bekker to explore community-based models for HIV testing (**#9, 94 citations**). This in turn has led to the establishment of the "Tutu Testing and Treating" units, which have been used to explore the utility and feasibility of point-of-care diagnosis and screening. This model has demonstrated the value of community-based HIV, TB and non-communicable disease screening at community level (**#10, 60 citations**). The latter was done in collaboration with the CEPAC team under Ken Freedberg's leadership at Harvard.

In the last 12 years, HIV prevention has become a major focus of Bekker's work, which has centred primarily on HIV vaccines. This has led to >30 co-authored publications and to Bekker's role as co-chair of the NIH-funded HVTN 100 (**#11, 40 citations**) and HVTN 702 protocols. Bekker has become internationally renowned for her understanding of key populations in Africa and their increased vulnerability to HIV and the many barriers to prevention services that they face. Bekker's

work on men who have sex with men (MSM) in Africa led to her clinical research site being included in the pivotal global iPrEx study, which was the first to show efficacy of oral pre-exposure prophylaxis in MSM (**#12, 4290 citations**). Bekker has gone to conduct demonstration studies of pre-exposure prophylaxis in MSM in South Africa. Much of this work has been as a result of a fruitful collaboration with Chris Beyrer (past President of the IAS) and Stef Baral from Johns Hopkins University. These key collaborations have resulted in >20 papers in the last 8 years (**#13, 137 citations**). More recently, Bekker extended her research on pre-exposure prophylaxis to studies in African women and adolescent girls (**#14, 55 citations; #15; #16, 20 citations**).

The other population which Bekker has championed in both treatment and prevention has been adolescents (**#17, 9 citations**). Bekker has developed key competencies in dealing with adolescents in collaboration with many researchers worldwide, including the HIV Vaccine Ethics Group in KwaZulu-Natal. A growing number of her publications reflect this field of interest with >30 having already been published. In 2011, Bekker raised funds for, built, and commissioned a community based comprehensive youth centre in Masiphumelele to form the hub for this adolescent focus.

Whilst HIV has been a key focus for Bekker in her adolescent division, she has also taken an adolescent-centred approach to investigating TB, bacterial and viral sexually transmitted infections, and mental health aspects of adolescent wellbeing. Bekker and her teams have developed international standard expertise in conducting a range of clinical trials in HIV, HPV, TB and other infectious diseases. Many of these trials are multi-centre, multi-country, and multi-sponsor. She has become involved in scientific groups within these networks and increasingly helps to design and (co-)chair protocols, which include HPTN 076, HPTN 075, HVTN 602, HVTN 601, HVTN 100, HVTN 701. Over the years, Bekker and the DTHC have been associated with, and accredited by, a range of clinical trial networks which include DAIDS clinical trials, the HIV Prevention Network (HPTN), the AIDS Clinical Trials Group (ACTG), the European and Developing Countries Clinical Trials Partnership (EDCTP), the HIV Vaccine Trials Network (HVTN) Microbicide Trials Network (MTN), INSIGHT, CPCRA (historical), PACTG (historical), the South African AIDS Vaccine Initiative (SAAVI) AERAS, IPM, and FACTS.

Linda-Gail Bekker has received numerous awards in recognition of her achievements. These include the Royal Society Pfizer Award for outstanding research into Tuberculosis and HIV Co-infections in Africa (2009), the UCT Ralph Kirsch Golden Pen Award presented to authors of a paper in the *South African Medical Journal* that garnered the most citations over two years following publication (2014), the UCT Alan Pifer Research Award shared with Prof Robin Wood in recognition of outstanding welfare-related research (2014), the South African Medical Association Merit Award (2016), the Desmond Tutu Award for HIV Prevention and Human Rights (2018), and the Academy of Science of South Africa's *Science for Society* Gold Medal Award (2018).

Finally, Bekker's standing as a thought leader in the HIV field is underscored by her co-chairing of the IAS-*Lancet* Commission on advancing global health and strengthening the HIV response in the era of the SDGs (**#18, 108 citations**). As a highly sought-after expert in her field, she has served on numerous scientific advisory boards both locally and abroad. She is the current chair of the Global Vaccine Enterprise External Advisory Group and is a board member of the International AIDS Vaccine Initiative (IAVI), the Advocacy for Prevention of HIV and AIDS (APHA), and the AIDS Vaccine Advocacy Coalition (AVAC).

In summary, Professor Linda-Gail Bekker is a world-leading physician-scientist who is thoroughly deserving of the award of Fellowship and would bring great credit to the College.