VIROLOGY MATTERS

JULY 2017

SPECIAL POINTS OF INTEREST:

- 1 PhD graduate
- 2 MSc graduates

INSIDE THIS EDITION

Workshop

Carolyn Williamson, Jo-Ann Passmore and Melissa-Rose Abrahams with **Françoise Barré-Sinoussi: Nobel Laureate for the co-discovery of HIV**

attended the 2017 HIV Cure Global Research Academy; 29–31 May at Wits Rural Facility, Mpumalanga. Carolyn and Jo-Ann were Faculty who presented on 'The role of immunization in HIV cure' and 'The immunology behind HIV latency' respectively.

PhD Graduate

Tanko Fatime Ramla

Thesis Title: Restoration of cellular immunity in HIV-infected individuals on anti retroviral therapy

Supervisor: A/Prof W.A. Burgers

Co-Supervisors Dr C. Riou & Dr A.P. Soares

HIV infects and impairs immune cells that are crucial in controlling the virus itself and a host of other infections. Antiretroviral therapy (ART) has substantially improved the health of HIV-infected individuals, but it does not control the virus long-term, and may not restore the immune system fully. Ramla's thesis assesses the impact of ART commenced during chronic HIV infection on the functioning of T and B lymphocytes. She demonstrates that the activation levels of T and B cells decrease after 1 year of ART, but do not normalise to levels of HIV-uninfected individuals. In addition, skewed T and B cell memory cell profiles persist. Ramla also finds that the recovery of functional T cell immunity to other co-infections such as TB depends on their memory profile before ART initiation. Overall, this thesis demonstrates considerable but only partial normalisation of T and B cell defects after short-term ART in HIV infection.

MSc Graduates

Millicent Omondi— awarded with distinction

Thesis Title:

Characterising Mycobacterium tuberculosis (M.tb)-specific CD4+ T cells.

Supervisor: A/Prof W.A. Burgers

Co-Supervisor: Dr C. Riou

Tuberculosis (TB) is the leading cause of death from an infectious disease worldwide. An improved TB vaccine is urgently required; this will be facilitated by the elucidation of the immune correlates of protection against *Mycobacterium tuberculosis (M.tb)* in humans, which to date have not been fully defined. Although Th1 responses are critical in immunity to *M.tb*, other immune cells are under investigation for their potential role in protective TB immunity. My thesis focused on further characterisation of Th22 cells, CD4+ T cells producing the cytokine IL-22, that form a major part of the human immune response to *M.tb,* and that have been shown to confer protection against a virulent clinical strain of *M.tb* in an animal model. The phenotypic characteristics of Th22 cells have not been fully defined, therefore, my study aimed to investigate chemokine receptor expression on *M.tb*-specific Th22 cells, and to compare them to Th1 and Th17 cells, as well as to other antigen-specific Th22 cells. Chemokine receptors are surface proteins that direct the migration of immune cells towards chemokine signals, and thus indicate the potential of immune cells to home to sites of infection. The chemokine receptors investigated in this study were CXCR3, CCR6, CCR4 and CCR10. She found that *M.tb*-specific Th22 cells were mainly CCR6+, with a quarter expressing CCR4 and CXCR3, and <5% CCR10. Similar to Th22 cells, Th17 cells were mostly CCR6+, but a higher frequency expressed CCR4+ (approximately half), fewer expressed CXCR3 (15%) and a greater frequency expressed CCR10, although this was still <10%. In contrast, Th1 cells were mainly CXCR3+ (60%), approximately half expressed CCR6, <5% were CCR4+ and CCR10 expression was absent. A minor subset of *M.tb*-specific CD4+ T cells co-expressing IL-22 and IFN -g were similar to Th22 cells in CCR6 expression frequencies, but resembled Th1 cells in CCR4 and CCR10 expression, and displayed intermediate frequencies (between Th1 and Th22 cells) for CXCR3 expression. *C.albicans*-specific CD4+ Th subsets exhibited chemokine receptor expression patterns highly similar to *M.tb*-specific CD4+ T cells, with the exception of higher CCR6 expression (80%) on Th1 cells. Mitogen-activated Th subsets, on the other hand, displayed a generally similar profile to pathogen-specific Th cells, there were however some clear differences: Th22 and Th17 cells displayed much lower frequencies of CXCR3 (<20%), and a considerably lower frequency of Th1 cells expressed CCR6 (<20%). In

summary, antigen-specific Th22, Th1 and Th17 cells displayed some heterogeneity in chemokine receptor expression, but there was substantial overlap between subsets, particularly with respect to CCR6 and CXCR3 expression. These findings suggest that use of chemokine receptors to classify Th subsets is of limited utility and that using mitogen-activated cells to characterise chemokine receptor expression on Th cells may not reflect their expression on antigen-specific CD4+ T cells. Overall, her study provides novel insights into the further characterisation of *M.tb*-specific Th22 cells, which can be applied to inform studies on the role of this subset in TB immunity.

Samantha Humby: awarded with distinction

Thesis Title: An investigation of the effects of helminth worm infection on the capacity of HIV vaccines to boost vaccine-generated immune responses

Supervisor: Dr Gerald Chege Co-Supervisor: Prof Anna-Lise Williamson; Dr William Horsnell

To protect against sexual transmission, successful future HIV vaccines will likely be given to adolescents as a booster subsequent to primary immunization during infancy. In sub-Saharan Africa (SSA), a large proportion of children are chronically infected with a variety of helminths. These infections may suppress the ability of a host to elicit vaccine-induced Th1 responses that are considered important for a successful HIV vaccine. This study investigated the effect of chronic helminthic infection on the boosting capacity of a poxvirus-protein HIV vaccine regimen (SAAVI MVA-C and Env gp140 protein) in a mouse model. Groups of mice were prime-vaccinated with SAAVI MVA-C through an intramuscular injection, and Env gp140 protein formulated in Alum adjuvant which was administered via an intraperitoneal injection. These vaccinations were given concurrently, 2 weeks prior to infection with Schistosoma mansoni (Sm) through a percutaneous route. Control mice were either left uninfected (Naïve) or infected in the same manner (Sm) without vaccination. A booster vaccination was given 8 weeks post helminth infection. HIV-specific immune responses were analysed in the blood and spleens two weeks after booster vaccination.

The magnitudes of cumulative IFN-γ ELISPOT responses to HIV Gag, RT and Env peptides were significantly ($p<0.05$) lower in the vaccinated and Sm-infected (Vaccine+Sm) mice (948 than Vaccine mice ($p<0.05$), however, no such statistical significance was observed in the differences seen between these vaccinated mouse groups for the number of activated CD8+ T cells. The frequencies of central memory activated CD4+ T cells were seen to be greater in Vaccine group (Gag; 34.28 ± 8.35%, Pol; 33.53 ± 6.34%, Env(CD4); 33.92 ± 3.87%, Env (CD8); 38.76 ± 10.52%) as opposed to the Vaccine+Sm group (Gag; 28.09 ± 3.95%, Pol; 26.45 ± 4.66%, Env (CD4); 28.79 ± 6.95%, Env (CD8); 28.65 ± 3.29%). Furthermore, Vaccine+Sm mice had higher titres of HIV-1 gp140-specific IgG1 antibodies ($p<0.0001$) (a Th2 antibody marker) but significantly less gp140-specific IgG2a ($p<0.0001$) and IgG2b ($p<0.001$) (Th1 antibody markers) antibodies. This trend was also observed with total non-Env-specific antibody titres.

This study demonstrates that chronic helminthic infection is associated with an attenuated boosting capacity of a poxvirus-protein HIV vaccine in a mouse model, suppressing both T cell cytokine production and Th1-type antibody responses. Since HIV vaccine-induced Th1 responses are considered important for a successful HIV vaccine, these data suggest that chronic helminthiasis may impact negatively on future HIV vaccination outcomes in adolescents living in SSA where helminthic parasites are endemic.

New staff

Zainonesa Hartley

I started working at the Science Faculty at UCT in 2001. I worked through two other Departments before joining Health Sciences. In April 2017 I was permanently employed and I am very exited to be part of the Virology team.

Lauren Cruywagen

I completed my BSc Medical Biosciences at the University of the Western Cape in 2011. Thereafter, I moved to Faculty of Health Sciences, UCT and obtained my BSc (Med) Honours in Infectious Diseases & Immunology under the supervision of Prof Brombacher. I then relocated to Johannesburg to complete my HPSCA registration at the NHLS concurrent to obtaining my MSc (Med) in Molecular Medicine & Haematology at WITS. In 2016, I returned to UCT employed as a Lab Technologist in the Division of Clinical Allergology & Immunology and recently joined **Wendy Burgers** Group as a Scientific Officer .

Gadisi Nthambeleni

Gadisi Nthambeleni is a medical scientist with a focus on understanding infectious disease. He is qualified at a Masters level in molecular medicine and haematology. He completed his masters at the DST/NRF Centre of Excellence for Biomedical TB research Wits node (CBTBR) at NHLS studying the Tuberculosis DNA repair system. Before that he worked as an intern at the Council for Scientific and Industrial Research (CSIR) as a lab assistant in the bioscience department in the biochemistry unit. At CSIR he was involved in a number of projects involving biocatalysis. His expertise is in the DNA repair system, drug resistance, PCR, southern blot and protein chemistry. He joined the HIV Diversity group of **Carolyn Williamson** in February.

New Postgraduate Students

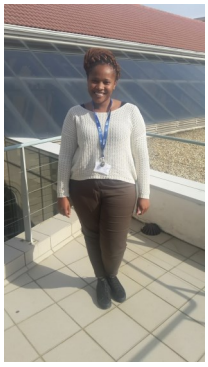
Ongeziwe Taku

I'm Ongeziwe Taku; I grew up and attended high school & completed my tertiary education in the Eastern Cape. I earned a B.Sc. in Microbiology and Biochemistry; Honours and Masters in Microbiology at the University of Fort Hare. I have worked as the laboratory assistant for two years in the Department of Biochemistry and Microbiology at the University of Fort Hare. I'm currently doing a PhD under the supervision of **Anna-Lise Williamson** with **Tracy Meiring and Zizi Mbulawa** as co-supervisors.. I joined Anna-Lise's group this year (February 2017). My research focuses on the prevalence of high risk human papillomavirus and cervical cancer screening in Eastern Cape.

Besides doing research, I like going to the beach and watching movies.

Postgraduate Students

Asanda Gwashu-Nyangiwe



I am a PhD student in the HIV Diversity and Pathology research group, division of medical virology, Department of Pathology, Faculty of Health Sciences, UCT. My PhD is part of the cure project where I will be characterizing viral diversity and immune escape in the HIV-1 latent reservoir of HIV-1 infected women from South Africa. In 2016 I joined the redox laboratory group, Faculty of Health Sciences, UCT as an NRF-intern where I was investigating the effects of photodynamic therapy on cervical cancer cells. I completed my MSc degree in 2015 at the Department of Biochemistry, University of Stellenbosch which focused on identifying the protective properties of rooibos polyphenols against skin cancer development. I completed a BSc Honours degree in Biochemistry with Stellenbosch University in 2012. Originally I am from a small town, Engqamakhwe, in Eastern Cape but grew up in Khayelitsha, Cape Town. Outside academics I am very passionate about youth development and giving back to my community.

Denzhe Singo

I am a Masters student in the HIV Diversity Group with Carolyn Williamson in the Division of Medical Virology. I am working on transmitted and acquired HIV-1 drug resistance due to pre-exposure prophylaxis (PrEP). I attained my Honours in Molecular and Cell Biology at the University of Cape Town and completed my BSc degree at the University of Venda. For my Honours, I worked on the role of auxin in the response of Arabidopsis to the ionic component of salinity stress. Apart from science, I'm also interested in music and fitness.

New Studies

Anna-Lise Williamson, Tracy Meiring, Harris Onywera and Ed Rybicki joined Don Cowan's (University of Pretoria) expedition to study the microbiome of the Namib Desert based at the research station Gobabeb. Our aim was to do a pilot study on the microbiome and virome of faecal samples from desert animals.

We have a new project starting entitled "A study of the feasibility of the introduction of a Swedish HPV test for the management and prevention of cervical disease in the Eastern Cape" . Researchers on the project include **Zizipho Mbulawa, Tracy Meiring**, Jennifer Moodley, Lynn Denny, **Ongeziwe Taku, A-L Williamson**. It is a collaboration with Walter Sisulu University (Dr Charles Businge) and University of Uppsala (Prof Ulf Gyllensten). As part of this study we ran a workshop on HPV at Walter Sisulu University with the speakers including **Anna-Lise Williamson, Tracy Meiring, Zizipho Mbulawa and Nomonde Mbatini.**

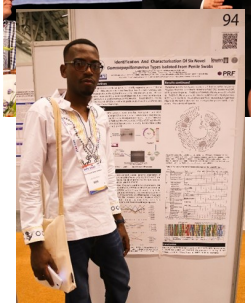
Carolyn Williamson's HIV Diversity group will be perform viral env gene PCR and sequencing on breakthrough infections on South African participants in the HVTN Antibody Mediated Prevention (AMP) trial

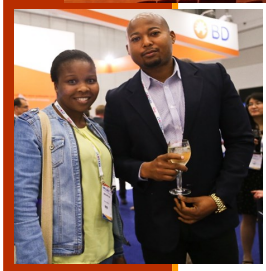
http://www.hvtn.org/en/science/HVTN-studies/AMPstudy.html

Conferences/Workshops

The 31st International Papillomavirus Conference (HPV 2017)

The HPV-2017 conference was held in Cape Town from 28th February to 4th March. The local organising committee was chaired by **Professor Anna-Lise Williamson** with Professor Ed Rybicki as deputy chair. Also on the local committee were Prof Lynette Denny, Prof Jennifer Moodley, Dr Inga Hitzeroth, **Dr Zizipho Mbulawa, Dr Tracy Meiring** from UCT and Professor Hennie Bother form Stellenbosch University, Professor Cindy Firnhaber form University of Witwatersrand , Professor Greta Dreyer from Pretoria University and Prof Mike Chirenje from University of Zimbabwe. The conference was a great success with NRF / SAMRC providing R1 million to sponsor African delegates.





Key Conference Facts:

1,302 delegates from 92 countries

985 abstracts received
141 oral presentations
795 posters
58 Scientific Sessions
16 Satellite Symposium Sessions
15 Workshop Sessions

Conferences/Workshops

Carolyn Williamson, Melissa-Rose Abrahams and Deelan Doolabh attended the **8th SA AIDS Conference** in Durban in June.

Carolyn was a member of the panel discussion for the plenary session “Putting the spanner in the works- the nuts and bolts of HIV prevention” which was co-chaired by Melissa-Rose.

Melissa-Rose co-chaired a track session entitled “Cat and Mouse- the Chase is on- Host Immunity versus Virus”.

Deelan Doolabh

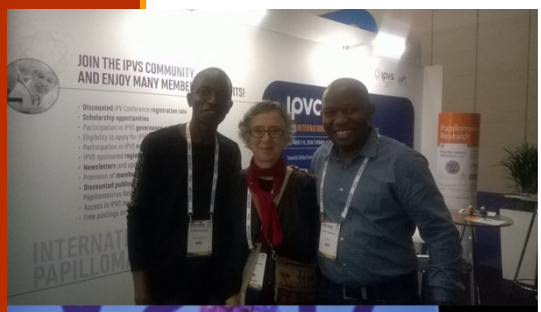
I attended the 8th SA AIDS conference held in Durban from the 13-15th of June. I presented a poster on my current masters project: The influence of LTR genotype on HIV-1 latency potential. The conference was well attended with numerous local and international delegates. Despite my work being cure related the main focus of the conference was on prevention of new HIV infections and was titled "The long walk to prevention". The programme was divided into 5 tracks with my area in track 1 on Clinical and Basic Sciences. Presentations included data on Maternal and Child Health care, Host immunity vs. Virus, HIV & TB Co-interaction, HIV Therapy and HIV and Other STI's. Plenary sessions included a presentations given by panels of Youth activists, leaders in the HIV research field and representatives of the global health organizations. Overall I was able to gain knowledge from the conference in all areas of HIV including those outside my research field. However, I was it was disappointed that little attention was given to basic science on the whole.

David Matten was selected to be a teaching assistant on the **Computational Molecular Evolution** workshop 2017, held at the EMBL-EBI campus in Hinxton, just outside of Cambridge from the 8th to the 19th of May. “This hands-on computational course aims to provide early-career stage researchers with the theoretical knowledge and practical skills to carry out molecular evolutionary analyses on sequence data.” “Besides acquiring the skills to properly deploy major software packages such as PhyML, RaXML, MrBayes, BEAST, BPP, etc., the course also focuses on statistical inference methods and algorithms.” Trainers included Nick Goldman, Ziheng Yang and Alexandros Stamatakis.

Conferences/Workshops

Harris Onywera

HPV 2017 Conference: 31st International Conference & Clinical and Public Health Workshops



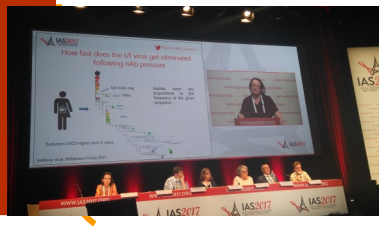
This scientific meeting was held on February 28-March 4, 2017 at the Cape Town International Convention Center, Cape Town, South Africa. This event gathered about 1,250 international researchers, clinicians, and other healthcare professionals to discuss the current and future status of papillomavirus epidemiology, research, and interventions. The meeting was organized into plenary sessions, satellite sessions, invited lectures (including industry sponsored sessions), oral and poster presentations, workshops (basic science, clinical research and public health), and networking events. I got the opportunity to attend the Student/Postdoc and HPV 2017 networking events held the Grand Café & Beach and Pigalle Restaurant, respectively. I met eminent HPV researchers including Prof. *Silvia de Sanjosé, the President of the* International Papillomavirus Society, and Dr. Lamech Mwapagha who also works on oesophageal cancer and microbiome. This meeting enabled me to keep abreast with the latest trends and front-line research, e.g., application of metabolome in studying cervicovaginal microbiota. My poster presentation titled "**High-risk HPV is strongly associated with high abundances of *Sneathia*, *Atopobium*, and *Gardnerella* in cervicovaginal microbiota of reproductive-age South African women**" had a very good audience and was voted as the second best poster presentation in basic science. Thanks to all the 52 people that voted for

Conferences/Workshops

In July I (**Philippe Selhorst**) received a scholarship from the Strategic Health Innovation Partnerships programme as well as the International AIDS society allowing me to attend the HIV cure and cancer forum as well as the 9th IAS conference on HIV science in Paris. The cure and cancer forum especially spiked my interest. It was the first time it was organised and the amount of scientific overlap between both fields amazed me. The immunotherapy that is revolutionizing cancer therapy might come in handy for flushing out the HIV reservoir and vice versa. The IAS meeting, following immediately after, was great for networking and meeting up with international collaborators. And finally Paris never disappoints either. The city has changed for the better the last few years with less space for cars and more for walking, drinking, eating, performing, hanging, dancing, singing, playing, cycling, skating people. Not to mention all the beautiful buildings. Overall a fantastic week with fantastic co-travellers!

This is us at a funfair, still happy, right before our intestines would be shaken to bits.

Carolyn Williamson, Phil and myself (**Melissa-Rose Abrahams)** were fortunate to attend the first **HIV Cure and Cancer Forum** and **9th International AIDS Conference** in July in the beautiful city of Paris. The rich basic science content of the program was a pleasant surprise and a breaking news announcement of a South African child who was born with HIV and put on early antiretroviral treatment, and who has been controlling HIV infection in the absence of treatment for approximately 8 years, was made. Advancements in the use of injectable ARVs were also presented.



Carolyn presented to a packed audience on the evolution of the transmitted virus.

Visits

Tracy Meiring visited Prof Ulf Gyllensten and Dr Inger Gustavsson at SciLife Lab in Uppsala University, Sweden. Tracy was trained in the processing of vaginal samples on FTA cards and an in-house qPCR assay for the detection and quantification of 13 high-risk HPV types.

The visit formed part of a collaborative project, funded by the South African Medical Research Council and Swedish Research Council (PIs Prof A-L Williamson and Prof U Gyllensten). The project aims to study the feasibility of the introduction of a Swedish HPV test for the management and prevention of cervical disease in the Eastern Cape.

OUTREACH PROGRAMME

Wishing 4 Wellness

During the winter holidays, the mucosal group hosted 6 high schoolers from Masi High in the Division as part of the Wishing 4 Wellness program they have been running for the past 18 months. Wishing 4 Wellness is working intensively with 20 adolescents from Masi around the topics of sexual reproductive health and biomedical research to contribute to this.

On a rainy Wednesday, these 6 girls came to UCT to discuss the scientific method, meet other students in the Division and hear why they had chosen to do biomedical research and what they loved most about their research, visit the pathology learning centre for a gruesome guided tour by Lyle Curry, and finally to do "an experiment" by hunting for bacteria on surfaces in the kitchen, toilet and outside that we "hypothesised" would be a good source for these.

Wishing 4 Wellness will culminate in October in an exhibition of drama and art around sexual reproductive health that the girls have worked on during their time in the program in the IDM Cafeteria. Dates to be confirmed….

Visitors

Jihane Hamdi, a veterinarian and PhD student from MCI, Morocco, visited us for two months from February – April this year. **Ruzaiq Omar and Henry Munyanduki** taught her how to make recombinant LSDV. Last year Ruzaiq spent 3 weeks at MCI. **Anna-Lise Williamson and Niki Douglass** are hoping to strengthen the collaboration between MCI, an accredited vaccine production laboratory, and UCT.

Jo-Ann Passmore hosted Prof. Jay Levy from UCSF in January. Prof Levy gave an IDM seminar entitled 'HIV/AIDS Research Achievements and Future Challenges'

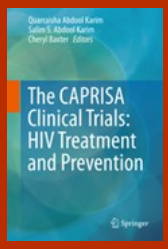
Jo-Ann also hosted Dr Ignatio (Nacho) Bravo from the Centre National de la Recherche Scientifique (CNRS) France in February. He presented a seminar "Papillomaviruses: Viral Evolution, Cancer and Evolutionary Medicine"

Prof Anna-Lise Williamson and Dr Tracy Meiring hosted Dr Gabriella Lillsund-Larsson a lecturer and HPV researcher from Örebro University (ÖU), Sweden. The research visit aimed to share expertise in next generation sequencing of human papillomavirus (HPV). Dr Lillsund-Larsson is also a collaborator on a Sweden Research Training Partnership Program between UCT, Eduardo Mondlane University (Mozambique), ÖU and Karolinska Institute, Sweden.

Recent Virology Publications

Chopera DR, Ntale R, Ndabambi N, Garrett N, Gray CM, Matten D, Karim QA, Karim SA, Williamson C. Early evolution of HLA-associated escape mutations in variable Gag proteins predicts CD4+ decline in HIV-1 subtype C infected women. AIDS. 2017 Jan 14;31(2):191-197

Wibmer CK, Gorman J, Ozorowski G, Bhiman JN, Sheward DJ, Elliott DH, Rouelle J, Smira A, Joyce MG, Ndabambi N, Druz A, Asokan M, Burton DR, Connors M, Abdool Karim SS, Mascola JR, Robinson JE, Ward AB, Williamson C, Kwong PD, Morris L, Moore PL. Structure and Recognition of a Novel HIV-1 gp120-gp41 Interface Antibody that Caused MPER Exposure through Viral Escape. PLoS Pathog. 2017 Jan 11;13(1):e1006074.



Williamson C, Morris L, Garrett N, Moore P, Burgers W and Mlisana K. From Bench to Bedside: Lessons from HIV Natural History Cohort Studies. Abdool Karim SS, Abdool Karim Q and Baxter C. (Eds) The CAPRISA Clinical Trials: HIV Treatment and Prevention. Springer. New York 2017.

Sharma S, Aralaguppe SG, Abrahams MR, Williamson C, Gray C, Balakrishnan P, Saravanan S, Murugavel KG, Solomon S, Ranga U. The PTAP sequence duplication in HIV-1 subtype C Gag p6 in drug-naive subjects of India and South Africa. BMC Infect Dis. 2017 Jan 24;17 (1):95.

BMC Infectious Diseases

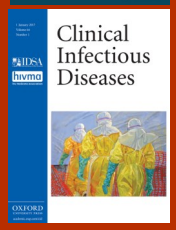
Retrovirology

Kariuki SM, Selhorst P, Kevin K. Ariën KA, Jeffrey R. Dorfman JR. The HIV-1 transmission bottleneck. Retrovirology. 2017; 14: 22. Published online 2017 Mar 23.

Anthony C, York T, Bekker V, Matten D, Selhorst P, Ferreria RC, Garrett NJ, Abdool Karim SS, Morris L, Wood NT, Moore PL, Williamson C. Cooperation between strain-specific and broadly neutralizing responses limited viral escape, and prolonged exposure of the broadly neutralizing epitope. J Virol. 2017. Jul 5. E-published

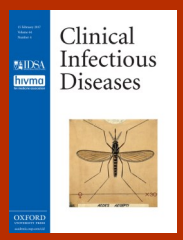
Selhorst P, Combrinck C, Ndabambi N, Ismail SD, Abrahams MR, Lacerda M, Samsunder N, Garrett N, Abdool Karim Q, Abdool Karim SS, Williamson C. Replication Capacity of Viruses from Acute Infection Drives HIV-1 Disease Progression. J Virol. 2017 Mar 29;91(8).

Ngandu N, Carlson J, Chopera D, Ndabambi N, Karim QA, Karim SA, Williamson C. Selection of HIV-1 variants with higher transmission potential by 1% tenofovir gel microbicide. JAIDS 2017. Accepted.



Selhorst P, Masson L, Ismail SD, Samsunder N, Garrett N, Mansoor LE, Karim QA, Karim SS, Passmore JS, Williamson C. Cervicovaginal Inflammation Facilitates Acquisition of less infectious HIV variants. Clin Infect Dis. 2017 64 (1) 79-82.

Hraber P, Rademeyer C, Williamson C, Seaman MS, Gottardo R, Tang H, Greene K,Gao H, LaBranche C, Mascola JR, Morris L, Montefiori DC, Korber B. Panels of HIV-1 Subtype C Env Reference Strains for Standardized Neutralization Assessments. J Virol. 2017 Jul 26.



Myer L, Dunning L, Lesosky M, Hsiao NY, Phillips T, Petro G, Zerbe A, McIntyre, JA, Abrams EJ. Frequency of Viremic Episodes in HIV-Infected Women Initiating Antiretroviral Therapy During Pregnancy: A Cohort Study. Clin Infect Dis. 2017. Feb 15;64(4):422-427

Myer L, Phillips TK, McIntyre JA, Hsiao NY, Petro G, Zerbe A, Ramjith J, Bekker LG, Abrams EJ. HIV viraemia and mother-to-child transmission risk after antiretroviral therapy initiation in pregnancy in Cape Town, South Africa. HIV Med. 2017 Feb;18(2):80-88

Hardie S, Smuts H. Human pegivirus-1 in the CSF of patients with HIV-associated neurocognitive disorder (HAND) may be derived from blood in highly viraemic patients. J. Clin. Virol. 2017. June. 91. 58-61.

Hardie DR, Korsman SN, Hsiao NY, Morobadi MD, Vawda S, Goedhals D. Contamination with HIV antibody may be responsible for false positive results in specimens tested on automated platforms running HIV 4th generation assays in a region of high HIV prevalence. PLOs one. 2017. July 31. Vol12(7). E0182167.

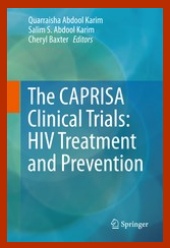
Tanko RF, Soares AP, Müller TL, Garrett NJ, Samsunder N, Abdool Karim Q, Abdool Karim SS, Riou C, Burgers WA. Effect of Antiretroviral Therapy on the Memory and Activation Profiles of B Cells in HIV-Infected African Women. J Immunol. 2017 Feb 1. 198 (3), 1220-1228.

Liebenberg LJ, Masson L, Arnold KB, Mckinnon LR, Werner L, Proctor E, Archary D, Mansoor LE, Lauffenburger DA, Abdool Karim Q, Abdool Karim SS, Passmore JS. Genital - Systemic chemokine gradients and the risk of HIV acquisition in women. J Acquir Immune Defic Syndr. 2017 Mar 1; 74(3): 318–325

Jaumdally SZ, Jones HE, Hoover DR, Gamieldien H, Kriek JM, Langwenya N, Myer L, Passmore JS, Todd CS. Comparison of sampling methods to measure HIV RNA viral load in female genital tract secretions. Am J Reprod Immunol. 2017 Jan 23.

Happel AU, Jaumdally SZ, Pidwell T, Cornelius T, Jaspan HB, Froissart R, Barnabas SL, Passmore JS. Probiotics for vaginal health in South Africa: what is on retailers' shelves? BMC Women's Health. 2017 Jan 19;17(1):7.
BMC Women's Health

Jaumdally SZ, Picton A, Tiemessen CT, Paximadis M, Jaspan HB, Gamieldien H,Masson L, Coetzee D, Williamson AL, Little F, Gumbi PP, Passmore JS. CCR5 expression, haplotype and immune activation in protection from infection in HIV-exposed uninfected individuals in HIV-serodiscordant relationships. Immunology. 2017 Aug;151(4):464-473.



Passmore JS, Liebenberg LL, Mkhize NN, Archary D, Masson L: Advancing Understanding of HIV Infection in Women Through Mucosal Immunology Studies. The CAPRISA Clinical Trials: HIV Treatment and Prevention. Springer International Publishing 2017.

Chapman R, JongweTI, Douglass N, Chege G, Williamson A-L. Heterologous prime-boost vaccination with DNA and MVA vaccines, expressing HIV-1 subtype C mosaic Gag virus-like particles, is highly immunogenic in mice. Plos One. 2017. March 09

Chege GK, Burgers WA, Müller TL, Gray CM, Shephard EG, Barnett SW, Ferrari G, Montefiori D, Williamson C, Williamson AL. DNA-MVA-protein vaccination of rhesus macaques induces HIV-specific immunity in mucosal-associated lymph nodes and functional antibodies. Vaccine. 2017 Feb 7; 35(6): 929–937.

Chapman R, Jongwe TI, Douglass N, Gerald Chege G, Anna-Lise Williamson A-L. Heterologous prime-boost vaccination with DNA and MVA vaccines, expressing HIV-1 subtype C mosaic Gag virus-like particles, is highly immunogenic in mice. PLoS One. 2017; 12(3): e0173352

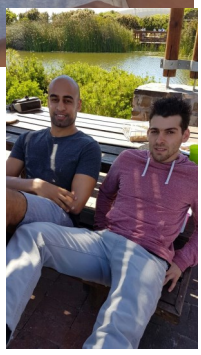
Smith JS, Sanusi B, Swarts A, Faesen M, Levin S, Goeieman B, Ramotshela S, Rakhombe N, Williamson A-L, Michelow P, Omar T, . Hudgens MG, Firnhaber C. A randomized clinical trial comparing cervical dysplasia treatment with cryotherapy vs loop electrosurgical excision procedure in HIV-seropositive women from Johannesburg, South Africa, American Journal of Obstetrics and Gynecology, Volume 217, Issue 2, 2017. Pages 183.e1-183.e11.

Meiring TL, Mbulawa ZZA, Lesosky M, Coetzee D, Williamson AL. High diversity of alpha, beta and gamma human papillomaviruses in genital samples from HIV-negative and HIV-positive heterosexual South African men. Papillomavirus Res. 2017 Jun;3:160-167.

Goeieman BJ, Firnhaber CS, Jong E, Michelow P, Kegorilwe P, Swarts A, Williamson AL, Allan B, Smith JS, Wilkin TJ. Prevalence of Anal HPV and Anal Dysplasia in HIV-Infected Women From Johannesburg, South Africa. J Acquir Immune Defic Syndr. 2017 Jul 1;75(3):e59-e64.

Birthday Celebrations

Anna-Lise's group celebrated **Anna-Lise's** 60th birthday having a picnic at Green Point Park on 9th March.



Birthday Celebrations

The Diversity Group held a surprise 65th birthday party for **Debbie** on the 20th June

Mandela Day

Members of Virology knitted 22 scarves for Scarves in the Park.

On Friday the 4th August a group of students hang them on trees in Obz Park much to the delight of construction workers, homeless people and hippies!

Thanks to all who contributed.

Compiled and edited by Debbie Stewart

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Congratulations!

Sam Humby married Roland Rehr on 5th May at Memoire in Muldersdrift.

Carina Combrinck married Peet Liebenberg at Ashanti Estate, Paarl on the 20th of March

Nkazimulo was born to **Zizi Mbulawa** in July

Compiled and edited by Debbie Stewart (Debbie.stewart@uct.ac.za)

In Memoriam

Anna-Marie Joubert (51) died on Friday, 21 July 2017, after a long battle with cancer.

Anna-Marie joined Medical Virology in 2000 as a purchasing officer and moved to the Institute of Infectious Disease and Molecular Medicine (IDM) in 2005. She was 1st diagnosed with cancer in 2001. She left in 2014 to face her second battle with cancer.

Anna-Marie is remembered as a dynamic, feisty person with a zest for life and great love for her children.

Anna-Marie is survived by her husband, Johan, and two children: Madelein & Nicolaas.

A beautiful memorial service was held at the IDM on Friday, 4 August 2017.

Compiled and edited by Debbie Stewart

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In Memoriam

Linda Stannard

Linda joined the Virus Research Unit at UCT in 1962 after completing her BSc at Stellenbosch. She became the electron microscopist for the unit and worked with many of the scientists there at the time. She did her masters and PhD in the department. She was an expert in using immunogold particles to tag proteins for visualisation by electron microscopy. She retired in 2000. Linda unfortunately died on the 16th October 2017.

All the photos and negatives of her extensive EM collection of viruses has been bequeathed to UCT. Some of these can be seen at:

http://www.virology.uct.ac.za/vir/teaching/linda-stannard/virus-ultrastructure

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Having fun!

Dave, Talita, Philippe and Ziyaad at Afrika Burn

Ziyaad in London

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