

VIROLOGY MATTERS

NOVEMBER 2019



Remembering Nene
and all those affected daily by sexual and gender-based violence in
our society

Dear Men,

We need to talk.

In the first week of August, UCT had a silent protest about gender-based violence. A month later, UCT marched to parliament. The organisers mentioned how glad they were to see at least a few men participating. Men, where were you? You say you're not trash but where were you?

There are those men out there that don't want to be associated with the #menaretrash movement. One of the main objections about this hashtag is that it is an insult. When men counter this movement, they are suggesting that the bruise to their ego is more important than understanding the meaning behind the hashtag. Men, we are the problem in this primarily patriarchal society, so we need to step up and become part of the solution (#patriarchymustfall). We are trash. If you still think #notallmen, let me ask you some questions. Do you think some men are not trash because they have never and will never sexually harass or assault a woman? Does it mean that these men have never or will never diminish a woman's dignity or shame her? Does it mean that these men have never or will never make or laugh at sexist or rape jokes? Maybe you believe that you, and your male family and friends are not trash because you have not done any of these things. But have how many of us speak out against men who do these things? The stories from women all show the same thing: all women know survivors, but no men know rapists. What are we doing as men? We are trash.

I am trash because I haven't done enough to change the status quo. It can take a while for men to learn and understand what it is to be an ally. It is simple really. Women don't need us to protect them, they need us to stand alongside them. Listen to all women (not just the ones you're related to) and realise it isn't just about being a protector - you have to actively fight the entrenched societal inequalities. Women live in fear of what a man, any man, might do to them. Men, do you know of the stories of what women have to go through and the daily behaviours they adopt to remain safe? When was the last time you sent the photo, license plate of the uber driver and got your family to track your trip? When was the last time you worried your outfit would get you killed? Women should feel as safe as men do in our society.

Uyinene's death, may she rest in peace, was the final crack that broke the silence on gender-based violence on a national scale. The victim blaming and trauma from society and the police is why women often choose to stay silent about the rape. Women from all walks of life were silent no more. For once they were shouting their stories. Women should be able to press charges against their perpetrators and not be scared of being revictimized. Why is the stigma of being a rape survivor worse than being a rapist? Men, when was the last time you were blamed for a crime committed against you?

The one thing I was taught when I was young, that I live by to this day, is to treat people how you want to be treated. If more of us thought this way, maybe we would have a brighter future. Men, do better. Be better. Be decent human beings.

Signed

A feminist, an ally, a man.

GET THE HELP YOU NEED WHEN YOU NEED IT

The University of Cape Town (UCT) community has had a trying season. In September, we lost two students, Uyinene Mrwetyana and Cebo Mbatha, to violent crime. These events have fuelled a variety of conversations surrounding gender-based violence and violent crimes in South Africa.

Here are a few ways to feel just a little safer on campus:



Report gender-based violence and/or sexual assault and/or harassment:

24-Hour Hotline 072 393 7824

Campus Protection Services	+27 (0)21 650 2222/3
Burnage	+27 (0)21 650 2222/3
Robert Leslie (upper campus)	+27 (0)21 650 2121/4080
Forest Hill (Residence)	+27 (0)21 650 3856
Medical Campus	+27 (0)21 406 6100
Hiddingh Campus	+27 (0)21 480 7101
Student Health Centre	+27 (0)21 650 1017/1020
Sexual Harassment Assistance	+27 (0)21 650 3530
Safety, Health & Environment Officer	+27 (0)21 650 2660/2246
Traffic Services	+27 (0)21 650 3640/3312/3
Access Control	+27 (0)21 650 1199
SAPS (Rondebosch)	+27 (0)21 685 7345
SAPS (Mowbray)	+27 (0)21 680 9580
SAPS (Woodstock)	+27 (0)21 442 3177

ICAS: UCT's Employee Wellness Programme with the Independent Counselling and Advisory Services (ICAS) has expanded into a bigger programme that now includes counselling, legal, financial and family care services. For any support or advice, please contact the toll free line that is available 24 hours a day. The options for counselling services are: telephonically, face to face at a counsellor's office or on-site at work.

Please note, to access on-site counselling, all bookings need to be made via the toll-free line: 080 111 3945.

SADAG UCT Student Careline (0800 24 25 26 or SMS 31393 for a call back), offers 24/7 telephonic counselling, referrals and general mental health support.



PhD Graduates

Alltalents Murahwa

Alltalents' thesis reports the discovery, genomic characterisation, phylogenetic analysis and the evolutionary dynamics of ten novel human papillomaviruses (HPV). The novel HPV types demonstrated the classical genomic organisation of Gamma-HPVs, with the exception of one of the viruses (HPV214) that lacked an essential E6 open reading frame. Phylogenetically the novel *Papillomaviruses* (PVs) all clustered with Gamma-HPV genus. He further examined variation of the novel types in clinical specimens from which they were identified and showed that 5 of the novel viruses had intra-sample variation. Alltalents then used the genome sequences of the ten novel viruses and related HPVs to analyse the evolutionary dynamics of these viruses at the whole genome and individual gene scales and found statistically significant incongruences between the phylogenetic trees of different genes implying gene-to-gene variation in the evolutionary processes of Gamma-HPVs. The last common ancestor (LCA) of the present day Gamma-HPVs was predicted to have existed between 49.8 million years ago, well before the existence of human precursors. These findings expand our knowledge of PVs and of the scarcely studied Gamma-HPVs.

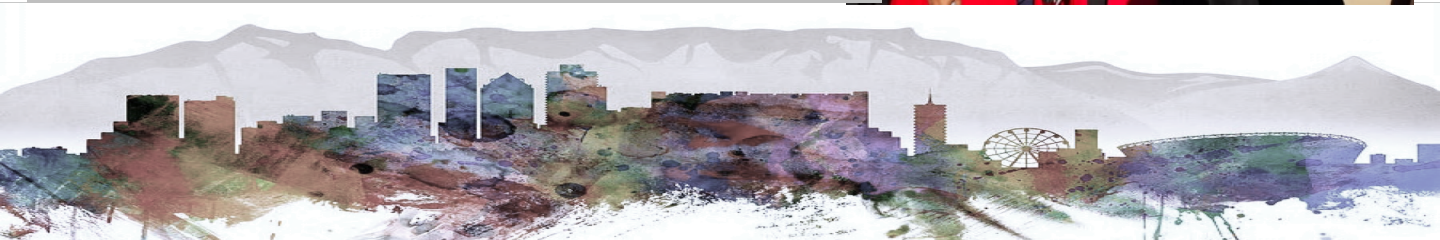


PhD Graduates

Iyaloo Konstantinus

Iyaloo's PhD dissertation evaluated the impact of several hormonal contraceptives (NuvaRing, NET-EN and oral contraceptive pills) on biomarkers of HIV risk in the lower reproductive tracts of adolescents, with particular focus on inflammatory cytokine responses and cervical CD4 T helper-17 cell activation. Since certain HCs are associated with increased HIV risk, this research aimed to understand biomedical mechanisms underlying this, such as activation of CD4 T cells that are HIV target cells. Iyaloo's research showed that highly-activated Th17 cells were the major mucosal CD4 subset in young adolescents. While no differences in Th17 cell frequencies were noted between study arms, those using NuvaRing had more activated Th17 cells and higher levels of Th17-related cytokines than adolescents using COCPs or NET-EN.

Iyaloo's future plans include being involved in public health interventions by our Ministry of Health, focusing on HIV prevention and reducing sexually transmitted infections, and also doing some research with the University of Namibia.



PhD Graduates

Olivia Carulei

I obtained my PhD in August last year and graduated in April. My research focused on the analysis of avian poxvirus genomes including two novel isolates from South Africa. The major finding was that these genomes are not as conserved as previously thought, with multiple, large regions of difference present in the central coding regions which have traditionally been considered conserved in both gene content and synteny. These findings may have implications in the use of avian poxviruses as vaccine vectors in terms of insertion sites of foreign antigens. I am currently doing a post-doc with Anna-Lise Williamson, focusing on viromics of both the female genital tract and chiropteran (bat) fecal microbiomes. I am also using this time to wrap up uncompleted research from my PhD which includes analysis of a third novel avian poxvirus genome, as well as analysis of a poxvirus outbreak in the flamingos housed at SANCCOB that were rescued from Kamfers Dam earlier this year. My current projects are allowing me to hone my computational biology skill set but I am still passionate about the field of vaccinology.



PhD Graduates



Shaun Barnabas

Shaun completed his thesis entitled “Sexually transmitted infections, bacterial vaginosis and genital inflammation as risk factors of HIV acquisition in adolescent girls and young women in South Africa” and graduated in July. Congratulations!!!

Honours Graduates

Micaela Lurie

I graduated in April with my Honours in Immunology and Infectious Diseases with distinction. The degree was comprised of course work, as well as a thesis. I thoroughly enjoyed the Immunology, Bacteriology, Virology and Vaccinology programmes. For my thesis I investigated T cell responses in PBMCs stimulated with different antigen preparations of *Chlamydia trachomatis*.



New staff and students

Pride Kanyoka

I am from Zimbabwe, I completed my MSc in Applied Science at Queensland University of Technology in Australia. I worked on *Chlamydia pecorum* epidemiology in wild free-ranging koalas. I joined the GEMS group in July as a PhD student. I will be working with *Chlamydia trachomatis* and its role in genital inflammation in a population at high risk of HIV infection.



Rushil Harryparsad joined the Masson group as a Scientific Officer in June 2019. Rushil's role is to characterize changes in immune profiles in women enrolled in three contraceptive clinical trials that are being conducted in Africa, Brazil and the Dominican Republic.

Sister Noluthando Mqaba and our honorary member, **Funeka Busakwe** (employed through the Desmond Tutu HIV Foundation) joined the Masson team as a Research Nurse and Counsellor, respectively. They are currently enrolling women into the Mucosal Injury from Sexual Contact (MISC) study that is being conducted at the Philippi Village Clinic.



Staff and student farewells

Henry Munyanduki and Ruzaiq Omar left Prof Anna-Lise Williamson's group at the end of June as their contracts came to an end.



Dr Zizipho Mbulawa has moved from Prof Anna-Lise Williamson's group to the Walter Sisulu University in Mthatha.



Staff and student farewells

As co-Editor of the Newsletter, I'm taking the opportunity to say farewell (sort of) and to celebrate the accomplishments of our group during the past couple of years. We've had two engagements, two marriages, two babies, and somehow in between, managed to get a massive amount of work done! You are an amazing team of people and it's been a privilege to work with you! I look forward to continuing to work together, albeit from a distance.

—Lindi Masson



Awards and achievements

Monalisa Manhanzva was awarded the CONRAD/Desmond Tutu HIV Foundation Fellowship to visit Eastern Virginia Medical School in the United States for a month. The in-depth training fellowship was focused on cutting edge research techniques in the field of HIV research, including new laboratory endpoints recently incorporated into Phase I clinical studies, as well as analysis and interpretation of data. She had the opportunity to receive training in phenotypic identification of HIV target cells, quantification of biomarkers of cervicovaginal inflammation, rapid assessment of vaginal microbiome, new biomarkers of adherence, mucosal PK sampling, research methodology, and scientific writing. Monalisa says: “It is such an honor to be one of only two students to be selected and I am very excited about this fellowship as I will greatly benefit from the training”



Colin Kaplan Award

Dr Melissa-Rose Abrahams is the winner of the 2019 Colin Kaplan Award. She is an NGAP lecturer and early career investigator in the Division of Medical Virology, who previously served in the role of Scientific and Research Officer respectively in the HIV Diversity Group of Prof Carolyn Williamson.



She has been actively involved in HIV transmission research since 2006 and cure research since 2015.

The greatest challenge to achieving a cure for HIV is a pool of silently infected cells that persists in the body despite antiretroviral treatment, known as the latent reservoir. This reservoir is understudied in African populations in general, and in women in particular. African women remain the most severely affected by the global epidemic.

Melissa-Rose took a leading role in an NIH-funded study to time the establishment of the HIV reservoir in nine South African women from KwaZulu Natal, a study involving multiple members of the Williamson (study PI) group and collaborators at the University of North Carolina where Prof Ron Swanstrom is co-PI. The findings from this study were recently published in the high impact journal 'Science Translational Medicine' and an image from the paper (generated by David Matten, a member of the Williamson group) was selected for the journal cover.

The study found that the majority of this reservoir is established close to the time that antiretroviral treatment was initiated. This finding has translational potential as it points to a window of opportunity for biomedical intervention at the time of treatment initiation to restrict the reservoir.

Congratulations, Melissa-Rose!!!



Millions of girls from disadvantaged communities miss between two and five school days every month due to lack of funds to purchase sanitary pads during their menstrual periods. This issue hinders learning amongst the youth in disadvantaged communities and also contributes towards absenteeism as well as drop-out rates.

The #Running4Pads initiative has the aim of securing and donating sanitary pads to schools and communities in need. We are a group of runners who participate in various races as a way of creating awareness around this social issue. Many of you have already donated to our cause and we'd like to thank you for your generosity and show you where your donations have gone.

Runners at Old Mutual Two Oceans Marathon and Cape Town Festival of Running: A number of our ambassadors took part in OMTOM and CTFoR this year, clocking kilometres for pads! #Running4Pads also had an unofficial support station at the 42km mark of the OMTOM Ultra providing potatoes, salt, oranges, bananas, high fives, and spraying cramping legs. We also had a small support table at CTFoR providing electrolyte drinks and sweets for runners doing the 50km and 100km events.





Pad drops: We've had a number of pad drops this year, servicing at least 15 schools and three community organizations. To date this year, we have supplied approximately 6500 packs of pads to girls in need. Towards the most recent pad drop, we collected 1800 packs of pads which were donated to four schools - this includes your generous contributions. We aim to provide pads to 31 schools on our list this year.





Mandela Day pad drive winners: hot chocolate party

The Division of Forensic Medicine donated the most pads towards the Mandela Day pad drive and had their yummy hot chocolate party on Thursday 22nd August.



Please follow us on social media for more updates:

@Running4Pads (Twitter and Instagram)

Running4Pads (Facebook)

Please feel free to contact me for any information - Sherazaan
ISMSHE006@myuct.ac.za

The “Slave Route Challenge” race 2019

The “Slave Route Challenge” is a running event aimed at raising awareness about Cape Town’s history and heritage. The race follows the “slave route” and honours those brave men and women who built the “Mother City”, hence the birth of the brimstone “Slave Route Challenge”. This event gathers together individuals and communities from various parts of the country and abroad.

This year’s race took place on the 21st March 2019, from the Grand Parade. Seasoned runners could take part in a half marathon or 10 km run and novices could enjoy the 10km Big Walk or 5km fun run/walk. The challenge takes runners through the Bo-Kaap where they enjoy a traditional Cape Malay Koeksister. Besides being a competition for many, the runners and walkers are given the opportunity to marvel at the beauty and the cultural diversity of Cape Town and to experience the heritage sites of District Six, Bo-Kaap and the Castle of Good Hope.

To honour the memory of these men and women, some members of the Burgers Lab (Wendy Burgers, Helen Mearns, Jerome Milimu, Marius Tincho and Tshepiso Mbangiwa) participated at the event and completed the 10 km run. Although we are not frequent runners, we all managed to cover the distance with times ranging from 1:02:25 to 1:20:35. After the race, the team met at a café for refreshments.

This event was also a great opportunity to relax away from the pressure of research work and bond together as a research group, learn to know each another, get to know our extra-academic interests, the love for music, our social aspiration and other interests. We look forward to completing the race in the coming years and invite other members in the Medical Virology Division to join us for the commemoration.





Prof Anna-Lise Williamson, Dr Harris Onywera, Dr Alltalents Murahwa and Dr Olivia Carulei in the Namib Desert as part of an expedition hosted by Professor Don Cowan (Pretoria University) and Gillian Maggs-Kelling (Gobabeb).

The aim was to collect samples to discover emerging viruses.

GET TO KNOW A VIROLOGIST...

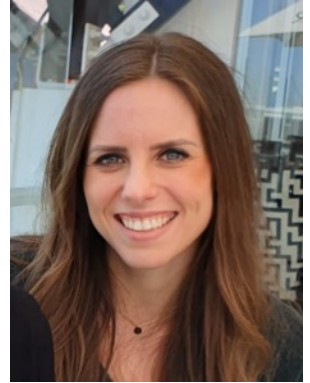
NINA RADZEY

1. What's the weirdest food you've ever eaten?

Crocodile carpaccio

2. What's your most used emoji?

This guy for sure -



3. If you could ask your pet 3 questions, what would they be?

- What could have possibly happened to you that makes you think you have to eat your own poo?
- Do you miss me as much as I miss you? (My dog lives in Germany with my family)
- Do you know it's me when I call you 1000 times on WhatsApp video call?

4. What personal trait has gotten you in the most trouble?

My tendency to leave anything admin-related to the last minute.

5. Name a product or service you love so much that you'd happily be that company's spokesperson.

Google maps – without it I would still get lost in this city ALL the time.

6. What has been the most important innovation you have witnessed in your lifetime?

Obviously, the internet - but cotton candy grapes are pretty great, too.

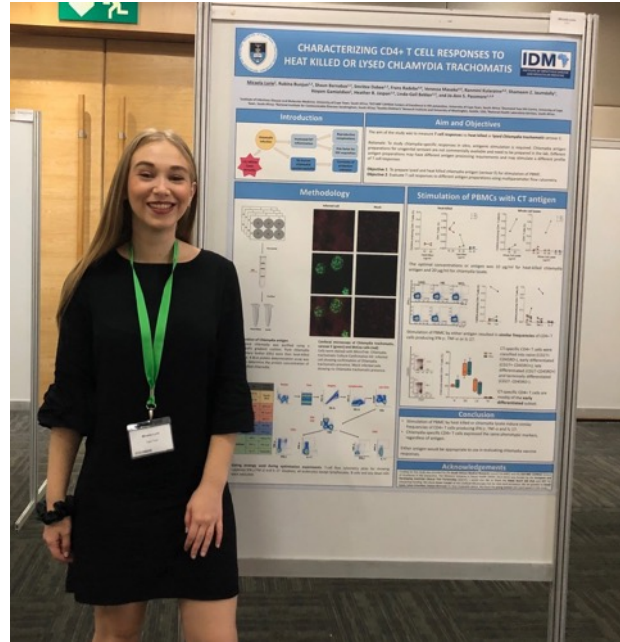
7. Tell us something about yourself that would surprise us.

I would cancel 99.9% of plans in order to watch Manchester United (at the moment this is followed mostly by tears and depression).

Conferences & Workshops

The **VIIIth Conference of the South African Immunology Society** took place in Umhlanga from June 18-20th. The theme was 'synergy in immunology' and there were many interesting oral and poster presentations on various topics such as HIV, TB and Neuro immunology to name but a few. I learned a lot and also attended a pre-conference Immunology 101 course which provided a great refresher on all things Immunology.

-Micaela Lurie



The **10th HIV Prevention Workshop**, hosted by CAPRISA, the Ragon Institute, AHRI and HPP, was held at the Sani Pass Hotel in the Drakensberg. The meeting was attended by members of the Division, including Dr Wendy Burgers and Prof Carolyn Williamson, Dr Melissa-Rose Abrahams and Dr Lindi Masson.

Conferences & Workshops – The Ruby Reports!

IAS Mexico City, Mexico 21-24 July 2019

I attended IAS 2019 held in Mexico City in July. The meeting focused on developing and implementing new interventions to curb the spread of HIV. Another key aspect of the meeting was discussing the ECHO trial results that showed no differences in HIV acquisition risk between women using the copper IUD, DMPA-IM or the LNG implant. My work on an ECHO ancillary study was included as part of a late-breaker poster presented by Dr Heather Jaspan (Div. of Immunology, UCT).



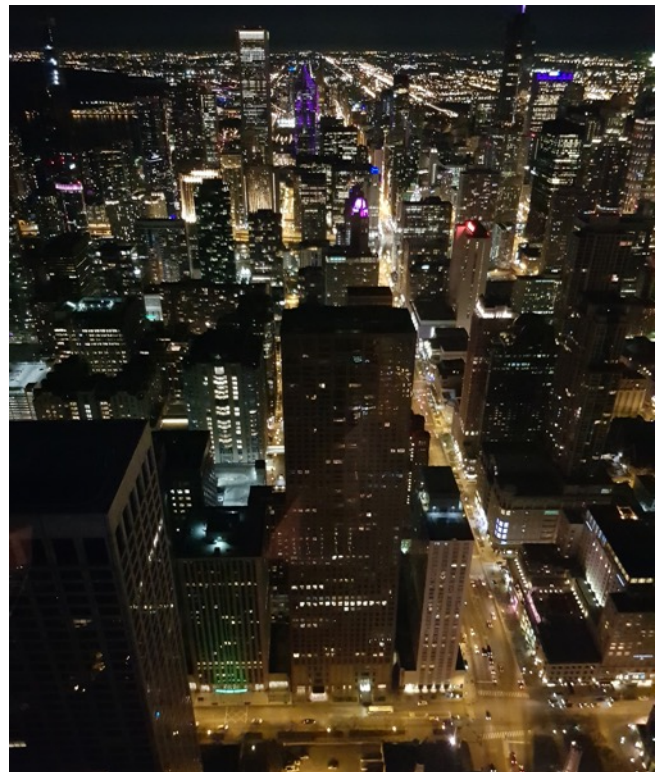
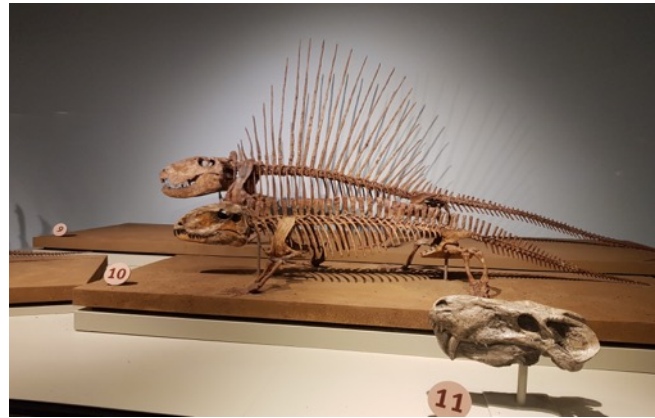
Conferences & Workshops – The Ruby Reports!

HIV Mucosal Systems Meeting Chicago, USA

06-08 May 2019

I attended the HIV mucosal systems meeting held in Chicago, USA between the 6th and 8th of May. The meeting centred around mucosal factors of HIV risk and transmission, including genital tract inflammation, hormonal contraception, the microbiome and sexually transmitted diseases. The talk I presented was entitled “Characterising *Chlamydia trachomatis*-specific CD4⁺ T cells in young South African women at risk of HIV.” Chicago is an absolutely beautiful city and I had a lot of fun exploring the sights.

-Ruby Bunjun



Conferences & Workshops

STI/HIV World Congress Vancouver, Canada 14-17 July 2019

The combined contraceptive vaginal ring increases Th17-related cytokines in the genital tract: A randomized crossover trial.

I travelled to Canada the day after my graduation for the STI/HIV World Congress, for which I was awarded a scholarship to present an oral. I am pictured on the right holding herpes (yellow), middle is gonorrhoea and the pink one is chlamydia. I got to see interesting things such as different condom sizes (below right), and also met important people in the field like Prof David Lewis (below left).

—Iyaloo Konstantinus



Pint of Science Festival

Cape Town, 21st May 2019



Dr Ruby Bunjun was invited back to the Pint of Science festival this year. Pint of Science is a global festival that takes places in pubs around the world simultaneously and invites the public to relax with a drink while learning about the scientific discoveries going on in laboratories, which will ultimately affect all of our lives.

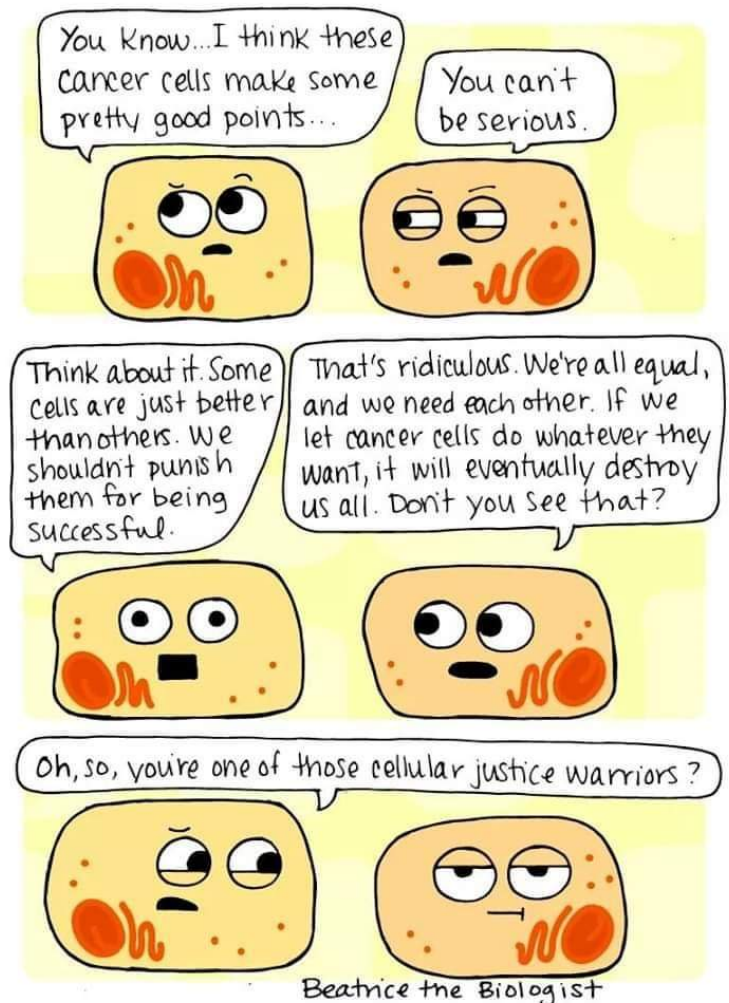
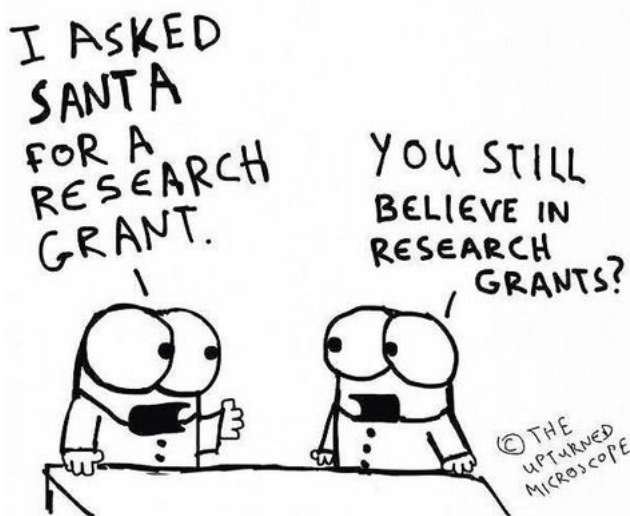
Expert speakers give short talks in the relaxed setting of a pub to showcase the exciting world of scientific discovery. Ruby's talk was on the possible link between hormonal contraception and HIV risk that was being explored in the Evidence for Contraceptive Options and HIV Outcomes (ECHO) clinical trial, which will have since had far-reaching implications for women who use contraceptives.

"Recently there's been this uproar that there's a possible link between the injectable contraceptive and HIV risk in women," she said. "I'll be talking about the big trial which will finally give us an answer."

Miscellaneous corner



Spotted on the runway at the #PlusIsEqual fashion event, our very own Lyle Curry promoting body positivity!



Publications (February - September 2019)

Williamson, C

Jaumdally SZ, Liebenberg LJP, Gumbi PP, Little F, Jaspan HB, Gamielidien H, Tiemessen CT, Coetzee D, Martin DP, Williamson C, Williamson AL, Passmore JS.

Partner HIV Serostatus Impacts Viral Load, Genital HIV Shedding, and Immune Activation in HIV-Infected Individuals. *J Acquir Immune Defic Syndr*. 2019 Sep 1;82(1):51-60. doi:

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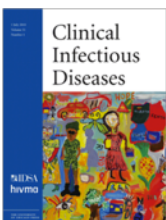
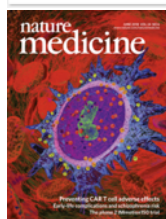
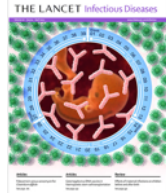
Williamson, AL

Jaumdally SZ, Liebenberg LJP, Gumbi PP, Little F, Jaspan HB, Gamielidien H, Tiemessen CT, Coetzee D, Martin DP, Williamson C, Williamson AL, Passmore JS.

Partner HIV Serostatus Impacts Viral Load, Genital HIV Shedding, and Immune Activation in HIV-Infected Individuals. *J Acquir Immune Defic Syndr*. 2019 Sep 1;82(1):51-60. doi: 10.1097/QAI.0000000000002089. PubMed PMID: 31169767.

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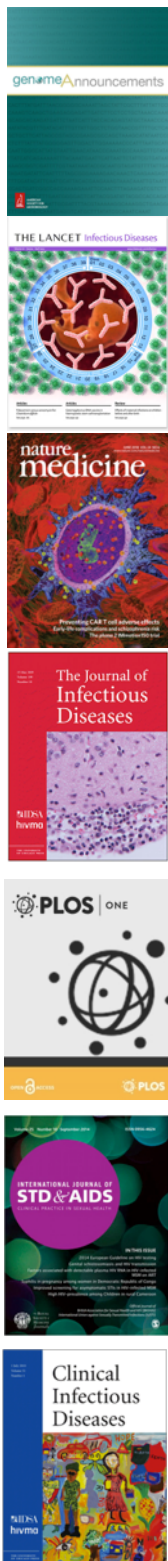
van Diepen MT, Chapman R, Douglass N, Galant S, Moore PL, Margolin E, Ximba P, Morris L, Rybicki EP, Williamson AL. Prime-Boost Immunizations with DNA, Modified Vaccinia Virus Ankara, and Protein-Based Vaccines Elicit Robust HIV-1 Tier 2 Neutralizing Antibodies against the CAP256 Superinfecting Virus. *J Virol*. 2019 Apr 3;93(8). pii: e02155-18. doi: 10.1128/JVI.02155-18. Print 2019 Apr 15. PubMed PMID: 30760570; PubMed Central PMCID: PMC6450106.

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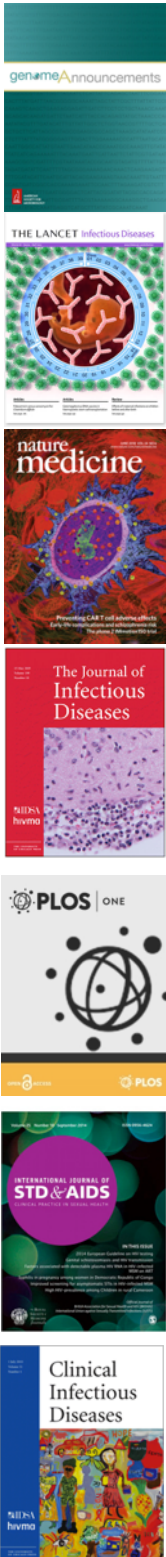
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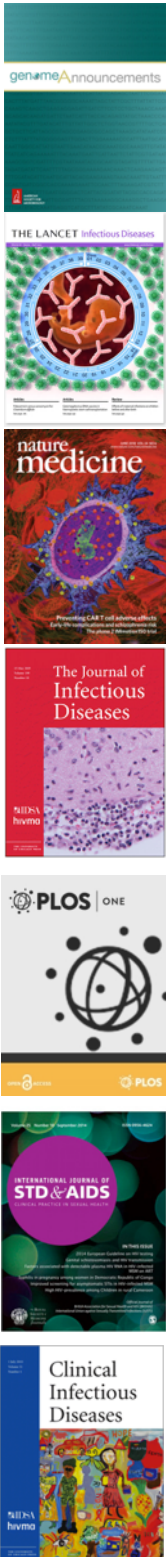
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