

AUTUMN 2023

Thanks to you...



What is the vaginal microbiome, and what does it have to do with protecting women against HIV?

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Reflecting on the past looking to the future



2023 is set to be a big year for us here at Burnet.

As I shared with you last year, we have launched our ambitious new strategy, Burnet 2030, which will drive our commitment, direction and impact over the coming years. It's the first time we've looked nearly a decade ahead, and that says a lot about where we are at as an Institute.

But as we turn our mind to the future, we do not forget our past. The only reason we are in a position to look so far ahead and plan for the future in this way, is thanks to our valued supporters like yourself.

Burnet can trace its origins to the passion and commitment of donor, **John Doble, who in the late 1950s supported the creation of a small virus laboratory at the Fairfield Hospital in Melbourne.** From these early days at Fairfield, a world-renowned Institute was born.

With the emergence of the HIV epidemic in Australia in the early 1980s, Fairfield Hospital and its virology laboratory became one of the primary centres for patient care, diagnostic services, public health reference and research into HIV and AIDS in Australia. **Many of our long-standing supporters joined us at this time and remain committed to the elimination of HIV as a public health threat through research and public health programs.**

In the years since then, we have undergone a name change and experienced tremendous growth, but with one constant: we are always responding to global health needs as they emerge - most recently of course the COVID-19 pandemic. **In fact, during the COVID-19 years, we have seen support from the public like never before. One thing is clear, without your help we would not be here today.**

I thank you for your valued support over the years and look forward to continuing our long and fruitful partnership.

**Professor Brendan Crabb AC
Director and CEO**

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Cover: Professor Gilda Tachedjian

“I’d like to thank everybody who supported our research into the SG6 antibody. The work we’ve been able to do in the lab over the last year thanks to you has the potential to transform current malaria surveillance programs in the Asia Pacific region.

PROFESSOR FREYA FOWKES

”



Unlocking the SG6 antibody

Malaria is still one of the leading causes of severe illness and death globally. An estimated 2.5 billion people are at risk of malaria, with young children and pregnant women most affected.

There are approximately 3,500 species of mosquitoes. Human malaria is transmitted only by females of the genus Anopheles. Of the approximately 430 Anopheles species, only 30-40 transmit malaria.



As we shared last year, a breakthrough has identified a specific antibody against mosquito saliva known as SG6 as a marker of malaria transmission in Africa. However, very

little research had been done up to this point to confirm SG6 is also a marker in the Asia-Pacific region, where different mosquitoes transmit malaria.

Thanks to your support, Freya and her team have begun their research on the SG6 antibodies and made some exciting steps forward.

“We’ve established the SG6 antibody types and dynamics that most accurately estimate mosquito exposure in the Asia-Pacific – specifically in humans with a known history of biting by dominant malaria mosquitoes.

“We’ve also demonstrated that these biomarkers mirror seasonal malaria transmission and mosquito abundance patterns in populations at high risk of infection in Southeast Asia.”

The end goal of this research would be a tool that can be integrated into national malaria surveillance, ideally a point-of-care test.

Towards *eliminating* HIV

Reflecting on how far we've come and what we've achieved

With the emergence of the HIV epidemic in Australia in the early 1980s, Fairfield Hospital and its virology laboratory became one of the primary centres for patient care, diagnostic services, public health reference and research into HIV and AIDS in Australia.

Many of our long-standing supporters joined us at this time, and remain with us to this day, committed to the elimination of HIV as a public health threat.

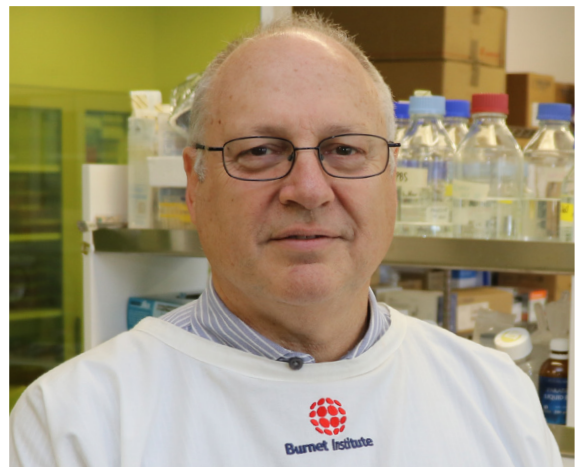


Above: **Professor Suzanne Crowe AO**, who retired back in 2018, was part of the team that set up the Fairfield hospital's HIV clinic and became an integral part of Burnet's development as a leading HIV research organisation.

Together we've made many great strides forward in the response to HIV, including:

- **new classes of HIV drugs** to address drug resistance;
- exploration of **vaccine possibilities**;
- **a device to simplify collection and transport of blood specimens** in remote locations;

- and the development of the **VISITECT® CD4 Advanced Disease Test**, which has been included in the World Health Organization's (WHO) list of prequalified in-vitro diagnostics, enabling health agencies to use the test to put more people onto HIV treatment sooner.



Above: **Associate Professor David Anderson**, who stepped down in November 2022, led the way on development of VISITECT® CD4. After 36 years at the Institute, he leaves an outstanding legacy of research.

Our public health response has involved:

- multi-country **HIV strategic planning** and developing **national AIDS strategies**;
- **HIV prevention programs** among highly vulnerable communities;
- partnering on **projects to address the psychosocial and health needs** of older people living with HIV;
- and supporting health systems strengthening in HIV areas.

We couldn't have got where we are today without your long-term support – thank you.

“While we need to acknowledge that we’ve come a long way with HIV, we also need to shine a light on women. The larger surface area of the vagina makes women especially susceptible to HIV.

PROFESSOR GILDA TACHEDJIAN

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Unlocking the vaginal microbiome to help protect against HIV

In 2021, 49 per cent of all new HIV infections around the world – some 1.5 million new infections – were in women and girls. In sub-Saharan Africa, this figure is 63 per cent.

The microbiome is the collection of all microbes, such as bacteria, fungi, viruses, and their genes, that naturally live on and in our bodies. Although microbes are so small they require a microscope to see them, they contribute in big ways to human health and wellness.

An optimal vaginal microbiome is one that’s dominated by Lactobacillus species, which produce the metabolite lactic acid. Women with an optimal Lactobacillus-dominated vaginal microbiome are less likely to get HIV.

“We’ve done studies showing that in the lab, lactic acid is really potent for killing HIV at low pH. A woman’s vagina is covered with epithelial cells, and the microbiota sit on there. Lactic acid has an anti-inflammatory effect on epithelial cells, which decreases your HIV risk. It also strengthens the junctions between these cells, preventing harmful bacteria and viruses, including HIV, from getting into the body.”

Gilda’s research aims to unlock the vaginal microbiome to develop knowledge and innovative devices to combat a variety of conditions affecting women’s sexual and reproductive health.

Above: **Professor Gilda Tachedjian** is one of a number of powerhouse researchers at the forefront of the modern era of HIV research at Burnet. She’s aiming to help women better protect themselves against the disease.

Supporting women in science

To celebrate International Women’s Day (IWD) on Wednesday 8 March, Gilda and her colleagues presented their research on the vaginal microbiome to donors, colleagues and board members.

“It was fantastic to see donations start coming through during the event, so thank you to everyone who has donated so far. We’re aiming to raise \$30,000 to support our research, and we’re more than halfway there, which is great. If you haven’t yet donated and would like to support vaginal microbiome research at Burnet, please consider a donation today.”

Scan the QR code to support Gilda’s research into the vaginal microbiome.



YOUR GIFTS IN ACTION



“I’m on the way to India, the first step in our project to reduce the rates of stillbirth globally, thanks to you.”

PROFESSOR JOSHUA VOGEL

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Reducing stillbirth rates in India

I’d like to thank everyone who has supported our project to test side-sleeping advice for the prevention of stillbirth in India. Our goal was to raise \$80,000 and we reached that goal, which is amazing - thank you very much.

I’m keen to roll up my sleeves and get started. I’ll be going to India myself down the track. But first there’s a lot of work to be done here writing protocols and engaging with stakeholders including Australian-based experts on sleep position during pregnancy, as well as our research partners in India. An important first step in the project is to put together education materials with the correct messaging, language and images.

So when will we hit the ground in India?

It’s hard to say when we’ll start recruiting people for the study. It depends on how long the protocol approval process takes, but I estimate that will be in 4-6 months. From there, I expect to have some concrete findings in at least 12 months, and I look forward to sharing them with you.

One final thing I’d like to say is that this is an entirely donor-funded program, so it is only with your generosity that we can go ahead at all – that’s really important for you to know.

**Thanks again.
Josh**

DONOR PROFILE



Extreme left:
**Les Harrison
at Ansell**

Left: **Joy, Les
and Helen**

Philanthropy: *a family affair*

Les Harrison, who passed away at the grand age of 93, was a passionate and long-term supporter of Burnet Institute. His daughters, Joy and Helen, continue to support Burnet in his memory.

Born in Albury in 1927, and graduating from Melbourne University in 1947 with a Bachelor of Science in Chemistry, Les worked for six years with the Shell Company and then for the rest of his life at the Ansell Rubber Company. He retired as Chief Chemist in 1992 but continued in a part-time consultancy role until 2005 when he was 78. A great innings.

Les played an integral part in the advancement of surgical glove and condom production, and made an important contribution to the development of the cochlear implant.

This close link between the products he worked on in a research and development capacity and the medical field piqued his lifelong interest in scientific and medical research, and led to his

interest in Burnet – one that he passed on to his daughters.

“My sister Helen and I used to go with Dad to various Burnet Institute functions,” Joy remembers fondly. “His far-reaching philanthropy to many organisations was definitely what influenced Helen and me to continue donating.

“Christmas in 2022 was actually our third Christmas without Dad,” Joy said. “We had plans for a memorial service in 2021 but had to cancel again because of lockdowns, which is why we were so relieved that we could actually have it at the end of 2022, with many people able to attend.”

Knowing her dad was a staunch supporter of Burnet Institute, Joy arranged for Burnet to accept special In Memoriam donations in his name at the service.

“He is missed every day.”

“Supporting Burnet is, for so many of our donors, generational. I hear often from donors that their interest in our research and public health programs comes, in particular, from their parents. It really encourages me that people find such meaning in what we do, such satisfaction in supporting us, that they bring their families along.

PROFESSOR BRENDAN CRABB AC

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If you would like to arrange for special occasion donations, whether it be birthday, In Memory, or anything else, we would be happy to help you set it up. Contact us at giving@burnet.edu.au

Gender Equity, Diversity and Inclusion

Supporting women in science on International Women's Day

Every year on International Women's Day (IWD), we celebrate women in science, and the work they are doing to improve health outcomes for women around the world.

This year we shone the spotlight on two brilliant researchers here at Burnet, Professor Gilda Tachedjian and Dr Lindi Masson, and their work to unlock the vaginal microbiome to protect against HIV and develop diagnostics for preterm birth risk prediction.

To watch the IWD presentation scan the QR code.



Burnet at Pride March, Melbourne

In February, the Midsumma Festival here in Melbourne provided an opportunity for everyone to demonstrate their pride in and support for LGBTQIA+ communities, as well as for LGBTQIA+ people to connect with one another and feel represented.

Burnet is passionate about diversity, equity and social justice and believe that LGBTQIA+ inclusion is our collective responsibility.



Above: Attendees at the Burnet IWD Women in Science Celebration 2023.



Above: Professor Caroline Homer (centre) and Burnet staff, family and friends marching together at Pride 2023.

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We have offices or representatives in Australia, Myanmar, Papua New Guinea and China, and also contribute to activities in other African, Asian and Pacific countries.