Griffith UNIVERSITY
Institute for Glycomics
Queensland, Australia

Rotary
District 9640

Malaria Vaccine Project

PATRONS
Hon Lawrence Springborg
PRID Noel Trevaskis OAM
PRIP Glen W Kinross AO

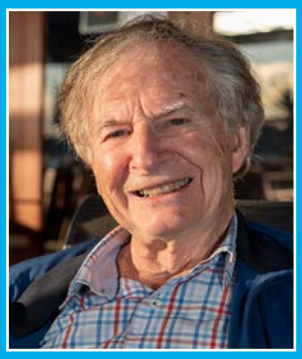
Colin Welch, Rotary Club Mermaid Beach preparing to kayak down the Murray in support of the malaria vaccine project

MALARIA VACCINE PROJECT

Newsletter Issue 11 - September 2021

MALARIA VACCINE PROJECT NEWSLETTER COMMITTEE

PDG Sandy Doumany OAM
Chair



Gerard Brennan OAM
Committee Member

Laraine Brennan
Committee Member

Nina Kristensen
Advancement Manager
Institute for Glycomics

OUR HISTORY

In 2015 Sam & PDG Sandy Doumany attended a Rotary Against Malaria Conference, with Dr Danielle Stanisic as the Guest Speaker on Research for a Malaria Vaccine. She mentioned that the Laboratory needed a piece of equipment to help with production of the malaria vaccine which would cost $8000.

Sam took that on board and approached PDG Graham Jones to see if we could raise the money required. Within a week, Graham, Sam & other Rotarians had raised the funds.

The Griffith Rotary Satellite Club was in the formation period and the cheque was presented to Dr Danielle Stanisic (a prospective member) at the next meeting. We all felt this sent a message to the new members "THIS IS THE POWER OF ROTARY".

In 2016 Gerard Brennan had discussions with the Governor General's Office in Canberra which led to the Governor General, Sir Peter Cosgrove, launching the Malaria Vaccine Project at a function in the Institute for Glycomics on 27 March 2017.

In 2019 the Australian Government awarded a Research Grant of $500,000 to the Project, matching the amount raised by Rotarians to that time.

On learning more about the journey for Professor Michael Good and Dr Danielle Stanisic with their research, there was a core of Rotarians who developed a passion to be part of the quest to save the lives of so many men, women and children and eliminate malaria from the world.

Committee Chair	PDG Graham Jones AM
Committee	Neil Jones (Treasurer)
	Laraine Brennan (Secretary)
	Gerard Brennan OAM
	Hon Sam Doumany
	PDG Sandy Doumany OAM
	Teresa Dawson
	Karin Kolenko
	Mervyn Powell
	PDG Ross Smith
	PDG Dai Mason

Rotary
District 9640

CHAIRMANS' MESSAGE

COVID HAS ITS VACCINE-WHY NOT MALARIA!

As I write this message, half of the Australian population is in lockdown against the rampant and highly contagious Delta Variant and there is a frenzy of COVID vaccination activity across the country. The effect on the economy, health facilities, young people's education, and mental health is profound and thunderingly obvious. Sadly this is what life is like all the time in many malaria endemic countries where a child dies every two minutes and villages and health centres are overwhelmed with the effects that malaria generates.

This is why our efforts to progress Professor Michael Good's vaccine PlasProtecT® are even more critical than when the Malaria Vaccine Project [MVP] started back in 2016. Recently Professor Good, Dr Stanisic and I wrote an application for the new Rotary Foundation 2021-22 Programs of Scale Grant which is worth $2 million over three years but will be highly competitive. In the application we outlined a Stage 1(b) Clinical Trial for the Lipid form of PlasProtecT® that would involve human volunteers to test that the vaccine was safe and generated strong activation of the immune system. The trial would also involve a sample of 60 human volunteers to evaluate the efficacy of the field-deployable lipid form of the vaccine to resist a challenge from a malaria parasite. This trial will of necessity be conducted in Australia so is much more difficult to fund than a clinical trial in an endemic country. However, if this application is successful or if we can raise that kind of money from other sources, PlasProtecT® would be on the brink of major clinical trials in an endemic country and the goal of a malaria-free world suddenly becomes reachable.

Thanks to your generous donations and ongoing support, the Malaria Vaccine Project has raised sufficient funds for the first part of this Phase 1(b) Trial to go ahead during 2022. As of the end of August, MVP has raised $1.3 million and around $500,000 of this is still available for the safety and immunogenicity part of the Phase 1(b) trial. There is a big gap to move to the efficacy trial so please continue to support us through your generous donations and by talking about our Project to others. Remember more than 400,000 children and pregnant mothers die from malaria every year: PlasProtecT® can change that!

PDG Graham Jones AM

WWW.MALARIAVACCINEPROJECT.COM

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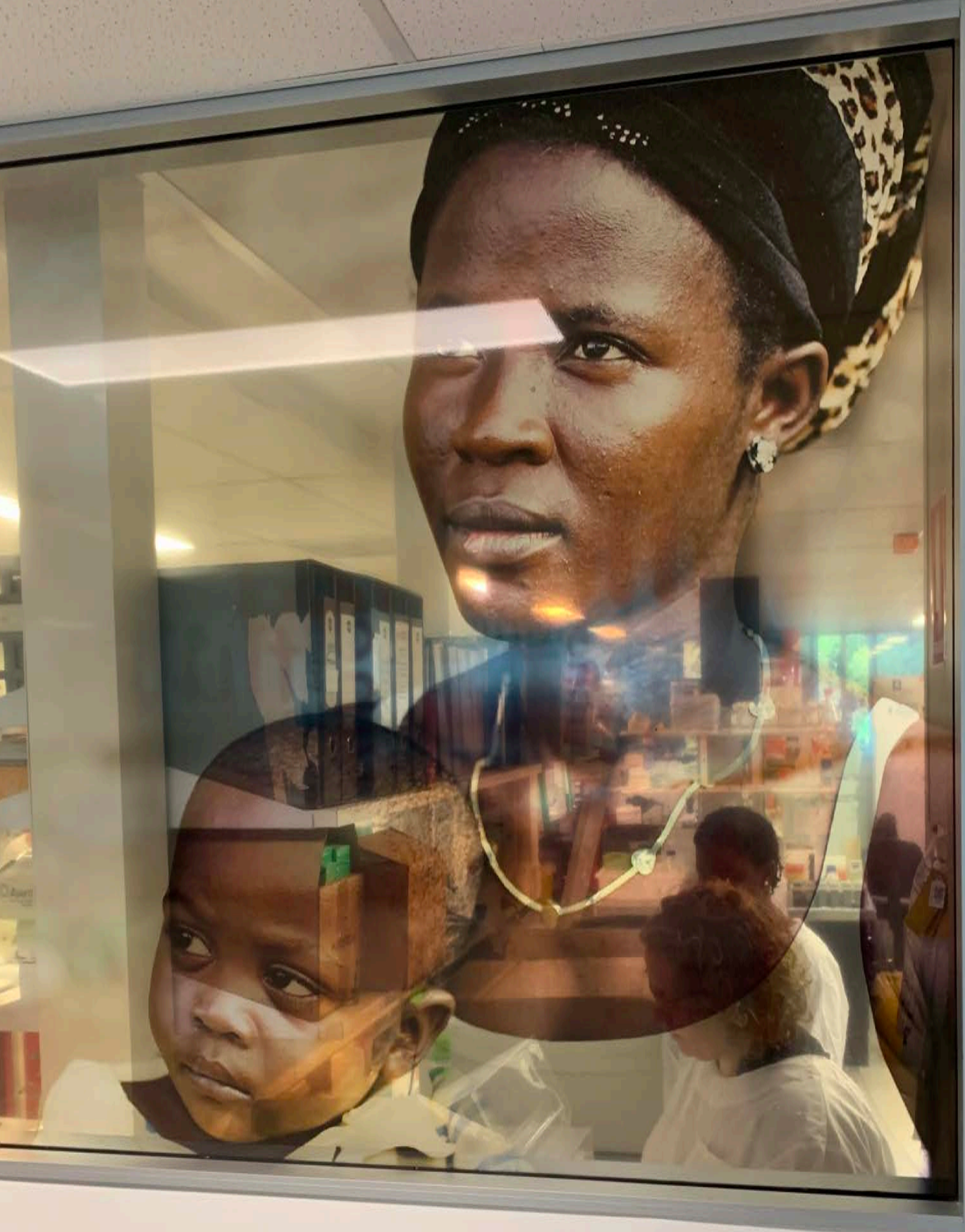


The Laboratory of Vaccines
for the Developing World

MALARIA VACCINE PROJECT UPDATE

PROFESSOR MICHAEL GOOD AO

There has been good progress with the development of the PlasPotecT malaria vaccine since our last newsletter. As Rotarians would be aware, PLasProtecT is a new concept for malaria vaccines that involves using the entire malaria parasite in the vaccine to provide maximal stimulation of the immune system.
This overcomes the main drawback of the 'subunit' vaccine strategy where only a single protein from the parasite is used. The parasite is adept at changing its coat proteins in order to avoid immunity, but it is not able to change the many proteins present in the PlasProtecT vaccine because many of these are not surface coat proteins but proteins that are critical for the parasite's metabolism (such as enzymes). As such, if the parasite alters these they will not function and the parasite will most likely not survive. This is the basis of PlasProtecT and why it has been able to protect mice from multiple strains of malaria. Readers would also be aware that the vaccine has completely protected some vaccinated volunteers from malaria – a very exciting finding, as we now move to larger clinical trials.

PlasProtecT has now been prepared in a form that can be easily stored in either a refrigerator or as a powder. The design of PlasProtecT has evolved from a chemically attenuated whole parasite vaccine (which was difficult to preserve and store in a refrigerator) to a form in which synthetic lipids (fats) replace the red cell membrane enabling the vaccine to be dried down to a powder or frozen without losing its potency. We recently submitted a paper (of which Dr Danielle Stanisic was the first author) to a major international journal describing these latest advances and outlining our strategy moving forward to human trials. One of the independent reviewers described the paper as 'important and interesting … and providing a strong rationale for the development of a whole parasite blood-stage vaccine'.

Readers may have been aware of a recent publication showing that combining chemoprevention (anti-malaria drugs taken during the malaria season) with the Mosquirix subunit vaccine resulted in enhanced protection compared to taking either alone. This was a good result and shows that future vaccines, including PlasPotecT, are likely to be more effective when combined with other preventative measures (including chemoprevention and bed nets).

We are very excited now as we move towards the clinic. The laboratory team under Dr Danielle Stanisic have done a superb job and the next 12 months should see some very exciting developments.

BEHIND THE MICROSCOPE LENS

Ms Maddie Walton - Research Assistant

Tell us about you! When did you join Institute for Glycomics?

I grew up on the Gold Coast and I went to high school at the Queensland Academy for Health Sciences campus. This is where I studied for the International Baccalaureate, which provided me with an opportunity to undertake a work experience placement in the Institute for Glycomics at age 16. I went on to complete my Bachelor of Biomedical Science with Honours at Griffith University researching Group B Streptococcus, where I discovered my interest in infectious diseases research. After completing my Honours thesis, I joined the Institute for Glycomics as a Research Assistant.

What are your research interests?

My research interests centre around vaccine development for infectious diseases. I am fascinated with bacteria and parasites, and this was sparked in the 2nd year of my undergraduate degree in the microbiology course taught by Prof Victoria Korolik, who also is part of the Institute for Glycomics. Specifically, I love the immunology side of the work and learning about vaccine development. I feel very grateful to work in a lab where all my interests align, as now I am working on the development of a malaria vaccine.

Why science?

I grew up with no family in the science field. My father is an accountant, and my mother is an artist. When I was young, my great-aunt passed away from breast cancer, and at the time I didn't understand what disease or cancer was or why it happened to our loved ones.

Initially I thought to have a career on cancer research, but quickly realised these diseases we face here in Australia gain a lot of support and funding due to being in the spotlight. I learned in my undergraduate degree about diseases in the developing world and the devastation they cause in countries that do not have access to research and resources. This was the pivotal moment I decided to research and join the fight against diseases of global impact, and I would love to be involved in finding a vaccine for malaria.

What are your interests outside of work?

Aside from work, I enjoy spending time with my dogs, going to the beach and eating great food. I also love to watch movies and read books!

What is your role in the Malaria Vaccine Project?

I am currently involved with developing a liposomal field-deployable whole parasite malaria vaccine. My responsibility is mainly to conduct and implement new experiments in our pre-clinical vaccine studies. This includes vaccine formulation optimisation, immunological assays, flow cytometry and pre-clinical laboratory evaluation of malaria vaccine candidates.

INSPIRATIONAL SUPPORTER

GED WILLIAMS

As a young boy I knew several family members and teachers who lived and worked in Papua New Guinea (PNG) and other low-income countries near the tropics.

A common discussion point at family gatherings was often around the need to protect oneself against malaria and then other discussions about the terrible disease and sickness associated with malaria.

Fast forward 30 years and I was working as a critical care nurse in Australia and forming the Australian College of Critical Care Nurses (ACCCN) and some years later the World Federation of Critical Care Nurses (WFCCN).

Soon after, I was travelling to many countries with my own packet of antimalarials and witnessing first-hand the devastating impact of malaria on so many lives, especially in the many low-income countries I visited.

My work as Executive Director of Nursing at Gold Coast Health and Adjunct Professor of Nursing at Griffith University for many years and my history with ACCCN/WFCCN also forged many new friendships with people with an interest in low income countries, health care, innovative inquiry, and the social justice agenda to rid humanity of afflictions like malaria.

During my professional journey I have befriended the Rotary community on the Gold Coast and I am now a proud Member of the Rotary eClub of NextGen, who have helped and supported me and the Gold Coast Health community in our efforts to bring improved health care to that community and beyond. Our friendship has grown over time, we have explored projects in other parts of the world and most recently relating to Rotary Foundation support for critical care nursing in PNG. Immediately prior to the COVID pandemic, I was invited to PNG to examine the needs of critical care nurses and their services to their community and was reminded of the scourge of malaria yet again. On my return from PNG my Rotary colleagues introduced me to the work of the Griffith University Institute for Glycomics and their endeavour to find a vaccine for malaria.

With over 200 million afflicted persons and more than 400,000 deaths per year (mostly children), this is by far one of the most wicked diseases threatening humanity that can and should be eliminated by a vaccine. There may be more than one solution to the malaria challenge and more than one vaccine, as we have seen with COVID. Watching the progress of the Griffith team with their vaccine trials now at the human stage is extremely exciting. There are many good causes we can contribute to but this one resonated with me for the reasons outlined above. In addition, the progress being made with this vaccine provides hope that this endeavour may be one of many solutions to help eradicate this wickedly deadly and disabling disease.

I wish the Griffith University Institute for Glycomics team all the best and thank them for their heroic efforts to find a solution to the scourge of malaria. I hope my contribution will help push the program a little further down the path of success.

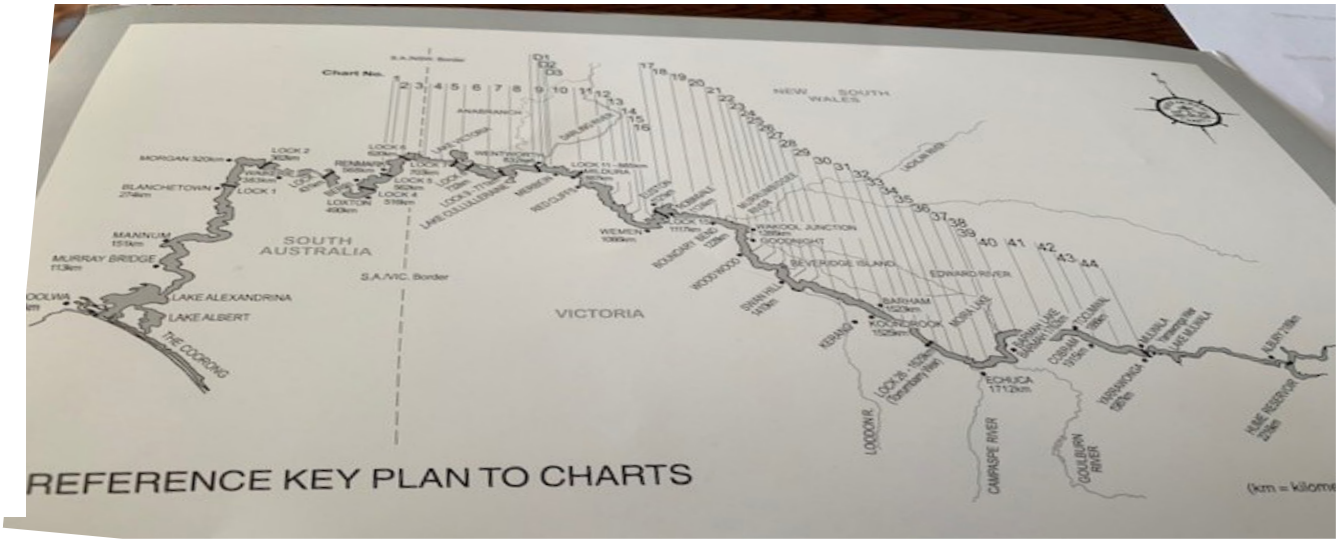
With best wishes,
Ged Williams
Adjunct Professor of Nursing, Griffith University.
Founding President, Australian College of Critical Care Nurses.
Founder, World Federation of Critical Care Nurses.

KAYAKING

I was approaching 70 when I decided to celebrate by setting myself a physical and mental challenge. I settled on kayaking 2,350 km of the Murray River. Why? I'm not sure, it seemed like an interesting challenge.

I have no real kayaking experience (I had an occasional paddle on the Murray river as an 11-year-old).

I am self-funding the trip, doing it solo (no support crew) and will be camping on the river banks with an occasional stay in caravan parks.



Once I committed to the journey, I had discussions with my Rotary club (Mermaid Beach) regarding the potential of using it as a vehicle to raise much needed funds for various charities that we support along with other local projects. The seeds were sown. I believe that completing the journey would be a personal achievement, overcoming the mental and physical challenges attached being rewarding. Additionally, I would love to raise the funds as mentioned above.

Why am I supporting the Malaria Vaccine Project with a proportion of funds raised? Firstly, it is a project that our Rotary District supports and following on from the success of the Polio project that was heavily supported by Rotary, I am hopeful that we can have an equally effective influence with the Malaria Vaccine Project. Currently I am actively involved in collecting bottles and cans with these funds heading to the Malaria Project.

Noting the high death rate in children under the age of 5 dying from Malaria strikes a personal chord with me: my first daughter died from Cot Death and I would do anything possible to prevent other families from experiencing similar tragedies.

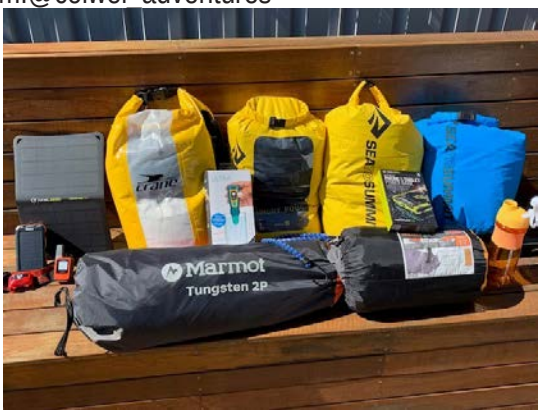
The Rotary Club of Mermaid Beach will be running an online raffle to raise funds.

First prize - 7 Nights' accommodation at an Accor Hotel to the value of $3,000.00
Second Prize - A $500.00 Bunnings Voucher.
Third Prize - One dozen bottles of assorted quality wines.

Full details regarding the purchase of tickets will be available shortly but if anyone is interested, they can email Colin at colwel@hotmail.com. All who have made contact with Colin will be notified once the raffle is open.

Colin intends to head off on his expedition in the first quarter of 2022 and is subject to border and travel restrictions.

To keep up to date and follow this amazing journey, head over to social media to follow Colin:
Facebook: Colwel Adventures
Instagram:@colwel_adventures



THE MURRAY

Q&A with PDG Graham Jones AM

Why did Rotary support the malaria vaccine PlasProtect®?
As you will notice in the extract on "Our History" in this Newsletter (p. 2), there were various Rotary connections with Dr Danielle Stanisic that inspired the creation of the Malaria Vaccine Project [MVP]. However, the real reason for our being is that Professor Good AO had an outstanding and proven track record as a vaccine scientist and that his promising work with PlasProtecT® had essentially stalled in 2016 through lack of funds. PlasProtecT® had already demonstrated excellent results in animal studies and, in a pilot study with humans, had been shown to be safe and to produce a high level of immunity. Professor Good and his team needed $500,000 to continue towards Clinical Efficacy Trials and we knew that Rotary was up to that challenge and more.

What drives the Malaria Vaccine Project?
I am sure that different people in the MVP Committee would answer this in different ways. For me, there is not a morning in the last 5 years that I haven't visualised images of more than 400,000 young children, mostly less than five-years, dying of malaria. One of these children dies every 2 minutes! Unlike the children we know and love, these children will never live to play outside, to kick a soccer ball, to go to school, to be leaders in their community and certainly not to be wonderful scientists like Professor Good and Dr Stanisic. This death-rate is a shameful statistic that the world must not tolerate any longer. We must eliminate malaria and we need an effective vaccine to do that.

When will the Malaria Vaccine Project stop raising funds?
Once again there would be many perceptions on our committee and amongst Rotarians and others who support us. For me, the key goal has and always will be to bring Professor Good's malaria vaccine to the brink of human challenge trials in an endemic country. Once the preliminary studies of the lipid form of his vaccine are completed, it can be freeze-dried and transported for trials anywhere in the world. However, as Professor Good wrote in a recent application for a Rotary Foundation Program of Scale Grant, "No one wants to fund preliminary studies in a non-endemic country like Australia." My response is that Rotary must guide the funding of those preliminary trials because that is the only way we can begin to "save lives in endemic countries." The funding for clinical trials in endemic countries is immense but at that stage I believe that pharmaceuticals and other global funding sources will be competing to support PlasProtecT®.

How does the Malaria Vaccine Project Ambassador program operate?
This is an outreach to the community, consisting of a range of speakers, located in many districts around the nation, presenting to Rotary clubs and other community groups. The purpose is two fold - raising awareness of this world class research carried out locally and fundraising to support the project. Ambassadors highlight the difference between treating such a disease and protection from it with desirable low cost, suitable vaccines. Finally, the clear and current data on malaria infections and deaths is compelling. Our MVP Ambassadors promote and highlight these issues into the broader community.

Q&A with Dr Danielle Stanisic

Given the current experience of rapid COVID vaccine development with major government support, is it likely that malaria will receive a substantial funding boost to accelerate programs such as The Malaria Vaccine Project?

It is possible. We've seen over the past 12-18 months that funding and resources (including personnel) for other vaccine development programs have been diverted to enable the rapid development and evaluation of COVID-19 vaccine candidates. While that's understandable, it should be acknowledged that this has also impacted on the progress of other vaccine research programs. We hope moving forward, that greater awareness of vaccine research in general will result in heightened interest and financial support for the development of vaccines against other infectious diseases, such as malaria.

Will the malaria vaccine, PlasProtecT, be suitable for mass distribution & inoculation in remote tropical regions?

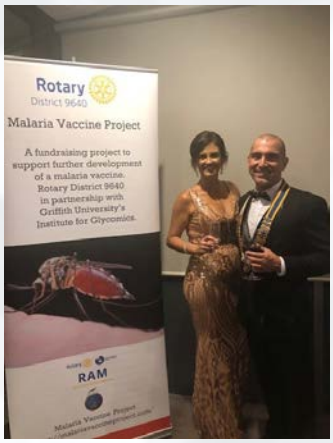
Yes, that is the plan. The current PlasProtecT vaccine candidate has been intentionally designed as a field-deployable formulation. The idea is that the vial containing the vaccine can be taken out into the field and either (i) directly thawed and administered (for a frozen vaccine formulation) or (ii) have the required volume of saline directly added into the vial containing the lyophilised (freeze-dried) vaccine product and administered (for a lyophilised/freeze-dried vaccine formulation). Both options are possible.

Is the vaccine development close to the critical stage of mass human trials in malaria endemic populations?

Vaccines must necessarily progress through different phases of evaluation during their development and vaccine safety is one of the key endpoints for these evaluations. This takes time. We are currently finalising plans for the Phase I trial of our field-deployable PlasProtecT vaccine formulation. Therefore, it is not unreasonable to envision that in a few years it could be in Phase III trials in malaria endemic areas where it will be evaluated in thousands of people at risk of contracting malaria. This of course, will be highly dependent on funding availability and sufficient financial support. The rapidity of COVID-19 vaccine development has shown us just how quickly vaccines candidates can be safely progressed through the different phases of testing and licensed for use when sufficient funding and resources are made available.

Rotary Club of Hope Island Black Tie Dinner

A stunning evening of glitz and glamour.



The Rotary Club of Hope Island Black Tie Dinner was held Saturday 25th September 2021 at Sanctuary Cove Golf and Country Club. Set to be a fabulous event, it did not disappoint. Cameras flashed, laughs echoed and the dance floor was a sea of dapper suits and gorgeous dresses to the sounds of Neil Diamond tribute.

Professor Michael Good AO provided an interesting and thought-provoking address with an overview of malaria and the progress of the Institute for Glycomics malaria vaccine project.

Guests dug deep and put the 'fun' into fundraising with silent auctions, wine raffles, money trees and exciting live auctions.

The total figure raised is yet to be finalised and we look forward to announcing it in due course.

Thank you to each and every attendee who made the night such a success, showing the true power of Rotary.

Rotary
Surfers Paradise

18th Charity Race Day

Come and join us for the Cox Plate at the Gold Coast Turf Club.

LOCATION

The Event Centre, Gold Coast Turf Club
Racecourse Drive, Bundall

COST

$85pp
Includes a fantastic hot and cold buffet lunch.
Cash bar. Tables of 10 available.

Saturday 23 October 2021. 11.30am

TO BOOK

www.trybooking.com/BQZLB
or scan the QR code.

LOTS OF PRIZES TO BE WON

Lucky Door, Best Dress Male & Female, Best Hat and plenty of Raffle draws.

All monies raised go towards

Malaria Vaccine Project

Griffith UNIVERSITY
Institute for Glycomics
Queensland, Australia

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Rotary District 9640

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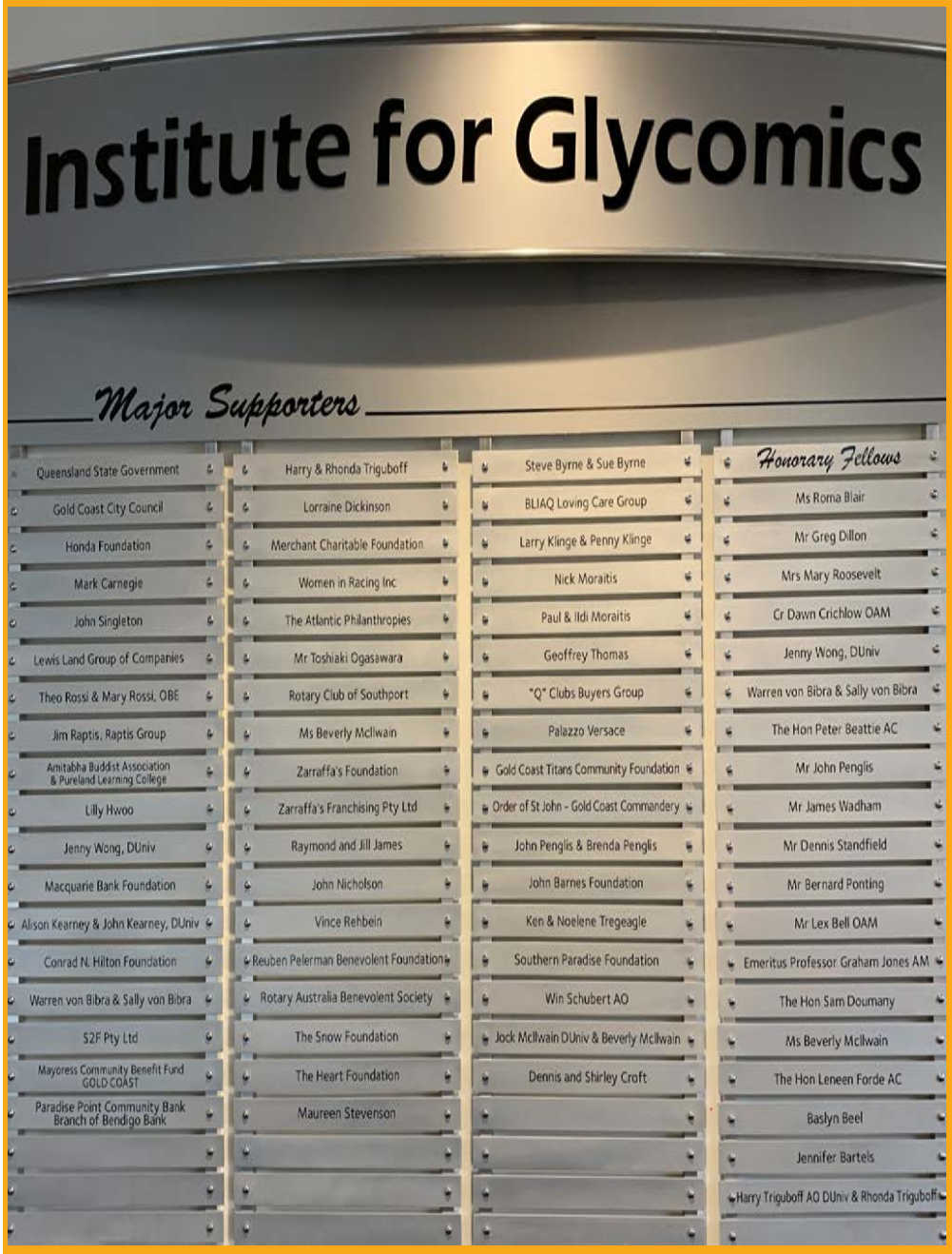

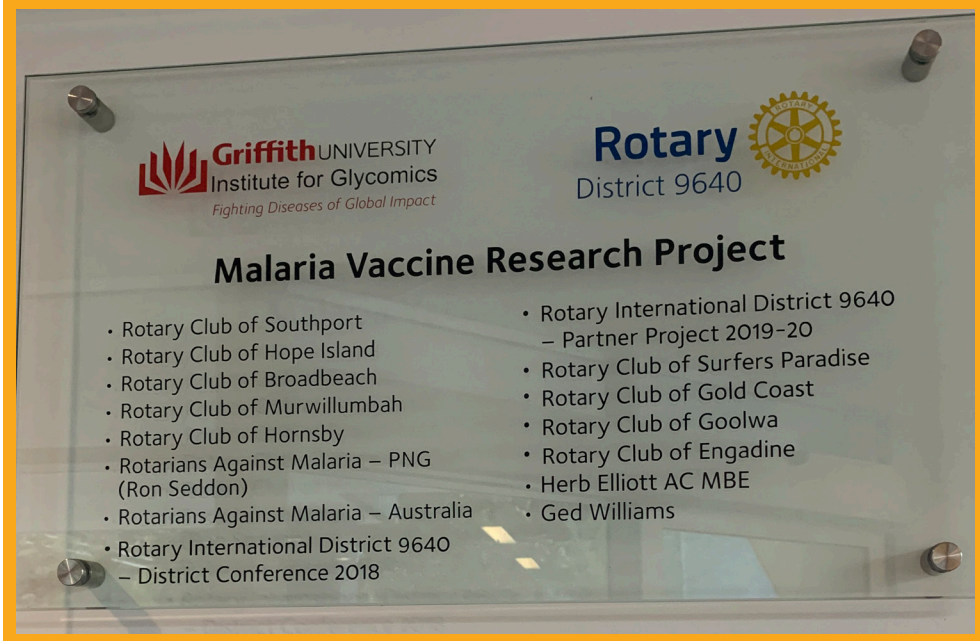

WE'RE SOCIAL - JOIN US ON FACEBOOK!
Facebook.com/malariavaccineproject