

Institute for Glycomics

*Fighting diseases
of global impact*



About us

Saving lives through Glycomics

Established in 2000, the Institute for Glycomics is one of Australia's flagship biomedical research institutes based at the heart of Griffith University's Gold Coast campus and the Gold Coast Health and Knowledge Precinct.

The Institute boasts state-of-the-art facilities combined with some of the world's most outstanding researchers with a significant focus on glycomics, a constantly expanding field that explores the structural and functional properties of carbohydrates (sugars). The Institute's research primarily targets the discovery of diagnostics, preventatives and cures for cancers and infectious diseases.

From the laboratory bench to the patient's bedside, translational outcomes are the ultimate goal of the Institute for Glycomics. The term translational refers to the 'translation' of basic scientific findings in a laboratory setting, while working with patients to help fight disease.

Our vision

"Our vision is to be a world-leader in the discovery and development of diagnostics, drugs, and vaccines through the application of innovative, multidisciplinary science in a unique research environment."

Our mission

"Our mission is to fight diseases of global impact through discovery and translational science."



Welcome message from Professor Mark von Itzstein AO

It is with great pride that I introduce you to Griffith University's Institute for Glycomics. Griffith University believes in and celebrates remarkable people; and the Institute for Glycomics is a true testament to this statement.

Our community supporters and donors play such a critical role in helping us in our global fight against disease, and we rely greatly on future donations to be able to continue our ground-breaking research.

Through the generosity of our donors, we have been able to progress a malaria vaccine candidate through to human clinical trials, make further promising discoveries in childhood leukaemia and other cancers, as well as advance our infectious diseases research.

Ongoing community support means we have also been able to obtain new equipment to enhance our infrastructure and research capacity.

Whether it's investing in new state-of-the-art facilities, enhancing our researchers' careers through scholarships and travel grants, or buying new equipment, supporting our work transforms people's lives for the better.

Community support and donations are imperative for the Institute to continue its fight against some of the world's most devastating diseases. Through the help of collaborations and philanthropy we are able to maintain our focus on translational science, providing hope for our future.

I would like to encourage you to support and follow the progress of the Institute for Glycomics; by doing so, you would be contributing to major, positive health changes of global proportions, indirectly playing a part in saving millions of lives.

Thank you for your generosity.

Professor Mark von Itzstein AO
Director and Founder,
Institute for Glycomics



What is Glycomics?

The Institute for Glycomics is one of only a handful of institutes of its kind worldwide using an integrated 'glycomics' approach to understand disease.

Glycomics is the study of the carbohydrate or sugar language within our body, referred to as the 'glycome'. Every cell in our body is decorated with these sugars, which are essential to our health and wellbeing.

These simple sugar molecules connect together to create powerful structures called 'glycans'. Cancers and infectious diseases can take advantage of glycans, resulting in major health problems and potentially death.

Our research focusses on the role that sugars play in disease and, using that knowledge, invent new diagnostics, drugs, and vaccines to diagnose, treat, or prevent cancer and infectious diseases.

We currently have a malaria vaccine in human clinical trials.

Malaria is a disease that infected 219 million people and killed 435,000 people worldwide in 2017 alone. If proven successful, this vaccine has the potential to significantly reduce the burden of malaria globally.

A clinical trial has also been completed for a drug candidate to treat sepsis.

Sepsis arises when the body's response to any infection injures its own tissues and organs. If not recognised early and managed promptly, it can lead to septic shock, multiple organ failure and death. Sepsis is reported to affect more than 30 million people worldwide every year, potentially leading to six million deaths, so this new drug candidate has the potential to save millions of lives.

We are in the early stages of developing a vaccine for streptococcal infections.

Group A Streptococcus (Strep A) is a common bacterial pathogen which can cause many different infections ranging from minor illnesses like pharyngitis (Strep throat) to very serious and potentially deadly diseases like acute rheumatic fever (ARF) and rheumatic heart disease (RHD). If left untreated, RHD causes heart failure, arrhythmias, stroke, endocarditis and complications during pregnancy. It is estimated that over 340,000 people die from RHD each year. The vaccine candidate is now ready to be tested in human volunteers and is being prepared for a clinical trial. If we can prevent streptococcal infections through this vaccine, we can reduce the risk of ARF and RHD altogether.



Research in focus

We have over 15 research group leaders at the Institute, guiding each of their dedicated teams of scientists in their various research projects. Our specialist research programs are centred around cancer and infectious diseases research.

Cancer research

The Australian Centre for Cancer Glycomics (A2CG) is one of our Centres of Excellence within the Institute for Glycomics. This unique national resource is dedicated to cancer glycomics research, which involves understanding the role that sugars/carbohydrates play in the development of cancers. Using this knowledge, our researchers can invent new drugs, vaccines and diagnostics to treat, prevent or diagnose cancer.

The state-of-the-art equipment and infrastructure, coupled with the brightest scientific talent in the field of cancer glycomics, makes the A2CG an exciting hub of truly revolutionary cancer research. Our researchers focus on some of the world's most devastating forms of cancer, including leukaemia, breast, ovarian, prostate, and melanoma.

Infectious diseases research

Infectious diseases pose some of the world's biggest health challenges. Our research programs within this area encompass bacterial, viral, parasitic and fungal infectious diseases.

Bacterial infections

The Institute's research into the role of sugars/carbohydrates in diseases caused by bacteria represents new and exciting opportunities for the discovery of next generation antibiotics and vaccines. Many of the bacteria that cause some of the world's most devastating diseases are rapidly developing resistance to antibiotics. Types of bacterial infections included within our infectious diseases research program include Strep A/Rheumatic Heart Disease, middle ear infections, gonorrhoea, melioidosis, meningitis, and gastroenteritis/food poisoning.

Viral infections

Diseases caused by viruses have plagued humanity for time immemorial. Unfortunately, drugs that combat viruses are extremely limited in number and are not broad spectrum. The Institute's research into viral infections such as hand, foot and mouth disease, HIV, influenza, parainfluenza, Respiratory Syncytial Virus (RSV), Ross River virus, chikungunya and other emerging alphaviruses, seeks to understand how sugars/carbohydrates are utilised in viral infections so that scientists may identify targets for the development of new drugs that will treat and cure these diseases.

Parasitic infections

Parasitic infections such as malaria still present as important public health challenges in tropical environments, with devastating socio-economic consequences in developing countries. It is now becoming clear that some of these parasites rely on carbohydrate-binding proteins in the host for attachment and invasion of human host cells. Our research in this area will yield useful information for the design of diagnostic tools, vaccines and drugs to fight these diseases.

Fungal infections

Aspergillus fumigatus is the most prevalent airborne fungal pathogen in developed countries; and, in immuno-compromised patients, causes the fatal disease, invasive aspergillosis. The Institute's research into this fungal infection will yield useful insights into the design of new anti-fungal drugs to treat it.

Supporters make our discoveries possible

Local community support is vital to the Institute's ongoing research in the fight against cancer and infectious diseases. We are deeply grateful for the philanthropy of our donors and for all donations, large and small.

Philanthropic donations change people's lives—whether it contributes to student scholarships, enhances researchers' careers, allows us to purchase new equipment, or helps us to complete a research project.

Every gift matters. Every gift makes a difference. Giving transforms lives.

Ways you can support us



Equipment

Equip researchers with the tools they need

Equipment and consumables are shared resources for researchers working on different research projects. We have a list of equipment and consumables, ranging from A\$5,000 to A\$1.5 million, the cost of which you can cover partly or fully.

Our team can provide you with a list of equipment that is needed and why it is so important to our research.

Naming rights can be included on fully funded equipment in the form of a personalised plaque, engraved with the donor's details.



Staff

Help us attract the best and advance careers

We aim to attract and retain the best medical researchers in their field to conduct research and to supervise our PhD students.

Levels of investment:

- Distinguished Professorship yearly salary: A\$400,000 (this includes on-costs and a consumables budget of A\$150,000 per annum, which is not part of the Professor's remuneration package) including naming rights
- Postdoctoral research scientist yearly salary: A\$150,000
- Research assistant yearly salary: A\$100,000.

You can follow their discoveries with interest and feel you have helped make their ambitions and research projects a reality.



Glycomics Circle

Support women in science

Through the fundraising efforts of the Glycomics Circle, the Institute awards Honours scholarships and Postdoctoral travel scholarships to female scientists, which are essential for their career development.

Contribution:

- A\$1,000 x three years.
- You can hear personally from recipients on how the Glycomics Circle's financial contributions have aided them in their research projects.



Student scholarships

Providing research students with a world-class education

Through hundreds of experiments conducted by our students, PhD scholarships help advance our research. Why not support a PhD student in a research or project area that interests you?

PhD scholarship with naming rights:

- A\$28,000 to cover living expenses whilst they study
- A\$15,000 to pay for consumables per year for four years.

Follow the student's journey of discovery through to graduation with pride and interest.



Everyone has the power to make a difference and can choose to support the Institute for Glycomics in many ways.

Donate regularly

No matter how big or small, cumulative giving ensures your impact will grow over time and turn into something significant.

One-off major gift

If you have a particular passion or interest and would like your donation to make a substantial impact, contact our team to discuss the ways in which your generous gift can be used at the Institute.

Leave a gift in your will

There is no wealth or age limit for donating to a cause you believe in. You can play an integral part in creating a remarkable future— whoever you are. Leaving a gift in your will is the most personal form of giving and an opportunity to create a lasting legacy.

Join the Glycomics Circle

Be part of a like-minded community and collectively raise funds for medical research at the Institute. The Glycomics Circle generously helps women researchers establish their careers through scholarships and international opportunities.

Our supporters

Choosing to be a supporter of the Institute for Glycomics will establish you in highly esteemed company.

“We have been supporting the Institute for Glycomics since 2006. We had the distinct pleasure of meeting Professor Mark von Itzstein who gave us a tour of their state-of-the-art facilities and an overview of the work being done by their remarkable team of world-renowned researchers; research of ground-breaking proportions. It is an honour and a privilege to support them in their fight against diseases of global impact; diseases that affect and devastate so many people’s lives each day. We feel confident that our financial donations are helping to shape a brighter, healthier future—a future filled with hope.”

Sally and Warren von Bibra

Institute supporters

“Bendigo Bank strengthens local communities by reinvesting in programs for health, education, the environment and many more. We are immensely proud to support the world-class research undertaken by Griffith University’s Institute for Glycomics. Our sponsorship ensures that the Institute and its researchers have access to the most innovative assets as they deliver on their vision of delivering novel drugs and vaccines to the community. We love the ground-breaking research of the Institute and follow their discoveries with great interest and admiration.”

Tony Jensen

Senior Manager Paradise Point Community Bank®
Branch of Bendigo Bank





Contact us

If you would like to support our research at the Institute for Glycomics and help us improve the health of future generations, please get in touch with us.

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