

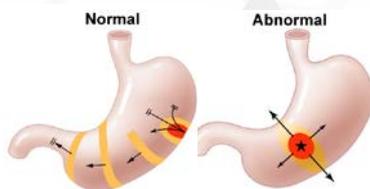


Providing answers for unexplained stomach disorders

Gastroparesis is much more than just a stomach ache. When the normal contractions that move food through the stomach and gut are disrupted, this can cause chronic nausea, pain, and vomiting, but even worse, it can develop into something far more problematic like gastroparesis, where the stomach also fails to empty properly.

Gastrointestinal disorders affect up to about 25% of the population and can significantly impair our normal day-to-day gut functions. The bad news is they are on the rise because, although they often appear spontaneously in otherwise healthy people, they also develop alongside obesity and diabetes.

Being unable to measure problems in the stomach has been a very real challenge and, this in turn, prevents good diagnosis and timely treatments, leaving patients suffering from the chronic symptoms without answers.



Waves of electrical activity pass regularly through the stomach (left). This pattern is lost in some gastrointestinal disorders (right).



Dr Tim Angeli in a surgical theatre



Dr Tim Angeli (right) discusses design concepts on the newest iteration of endoscopic mapping device with PhD student Alexander Chan (left).

Finding a way to measure the problems going on inside someone's stomach has become the pivotal focus of Dr Tim Angeli's research and he has developed a new tool that can measure and record the electrical activity in the stomach and gut (the gastrointestinal or 'GI' system) without surgery. This tool not only helps physicians get a better understanding of what's actually going wrong for patients with disorders like gastroparesis, but it could also lead to better diagnosis, which would mean patients receive quicker and better targeted treatments and therapies.

When Tim reflected on his pathway to developing this new and non-invasive way of diagnosing digestive disorders, he knew he had AMRF donors to thank for helping him on his path. Tim was the recipient of the 2016 Edith C Coan Postdoctoral Fellowship and, in 2017, received one of two Kelliher Charitable Trust Emerging Researcher Start-up Awards.

"This funding was a true enabler for my research and allowed me to conduct experiments and trials that resulted in the development of a safe and effective technique - endoscopic gastric electrical mapping - along with supporting the very important, next phase of translation of this technique to human trials", he says. "Helping

real people with my work has always been the goal for me."

In a rare feat for such a young researcher, charitable giving enabled Tim to bring his promising endoscopic gastric mapping technology into the clinic as a new diagnostic tool to help patients with unexplained GI distress.

"We started the Kelliher Charitable Trust Emerging Researcher Start-Up Award back in 2014 to create exactly this type of impact," explains Harry R I White, Chairman of the Kelliher Trust.

"I am delighted that our donations have allowed a developing and talented researcher to contribute to medical advances in such a significant way and this helps to reinforce the importance of supporting researchers at this vital stage of their career."

In late 2018, and in recognition of his ground-breaking research, Tim was awarded a prestigious Royal Society of New Zealand Rutherford Discovery Fellowship to ensure he can keep addressing the urgent need for new diagnostic and therapeutic strategies to treat GI disorders.

continued on page 4

Seeking breakthroughs in personalised care for cancer patients

For the last four years, Dr Sandar Tin Tin has dedicated her research to help improve patient outcomes for the thousands of New Zealanders who are diagnosed with lung, breast and endometrial cancer every year.

In 2015, Sandar's first application to the AMRF was successful because her drive and capability to improve cancer treatments for patients was readily apparent to the committee undertaking rigorous peer-review of applications.

Through her ongoing research, Sandar has identified that a considerable proportion of patients could receive more targeted and effective cancer treatments after genetic testing.

"New Zealanders can get better lung cancer treatment when we know more about their genetics and their other medications. If we can target their therapy to who they are and what they already use, we can improve their chances of survival", says Sandar.

In her quest for improved cancer treatments for lung cancer patients, Sandar has developed tools and models that she hopes to expand for use for breast and endometrial cancer patients, too. But she knows the importance of not working in isolation and works closely with members of government taskforces and other working groups to ensure her findings are translated to real-life practice.

Generous donors have played a big part in helping Sandar achieve her mission so far, with Sandar receiving the early-career boost of an AMRF Postdoctoral Fellowship and a 2016 Kelliher Charitable Trust Emerging Research Start-up Award. In 2018 she was awarded an AMRF project grant for her work studying medication use and related consequences in New Zealand breast cancer patients. This will further help Sandar's career goals to inform policy, practice and efforts to improve cancer care, outcomes and reduce inequities.

Sandar is in no doubt that the support she has received from AMRF funding

helped her to receive both a Health Research Council/Breast Cancer Foundation Partnership grant and a prestigious, highly sought-after fellowship at the University of Oxford's Cancer Epidemiology Unit. This Girdlers' Fellowship awarded by the Health Research Council will allow her to spend two years at the UK College and when Sandar returns to New Zealand, there will be an additional year of support to allow her to apply her newly gained skills and knowledge to people and patients here at home.

Both her HRC grant and Fellowship, with her upcoming time in the UK, will mean Sandar can expand her studies into breast cancer risk and prevention. Sandar will investigate associations of breast cancer risk with physical activity and sedentary behaviours, along with the opportunity to access a goldmine of data through the UK Biobank. This repository contains medical details for over half a million people, including 270,000 women, with a wide range of risk factors for breast cancer. Sandar will use the data to help revise public health strategies in her efforts to prevent the most common cancer in women worldwide.

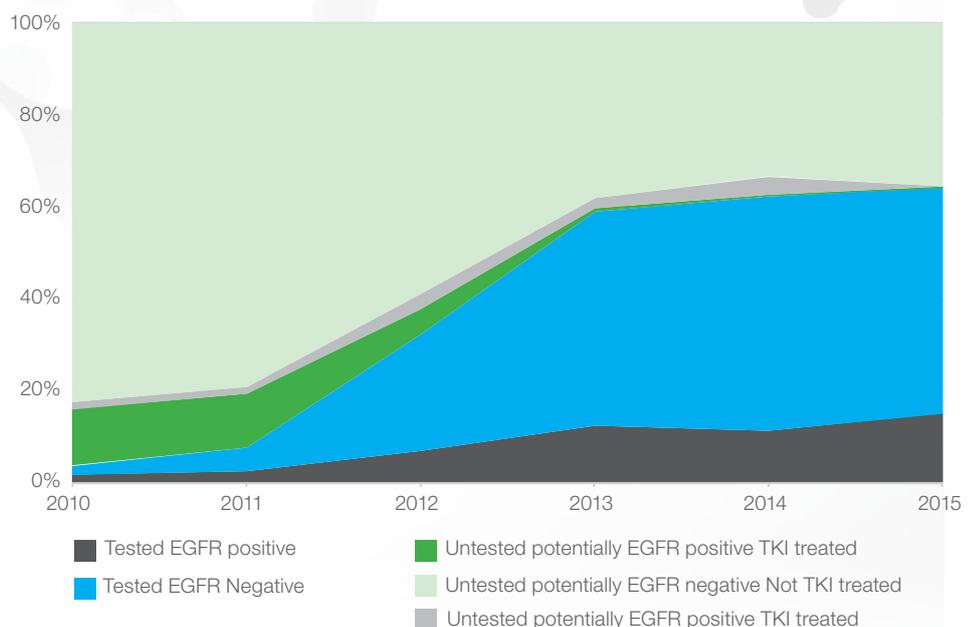


(L-R) Professor Mark Elwood, Dr Sandar Tin Tin and Prof Mark McKeage

As a young researcher, Sandar knows her other, never-ending task is to find the necessary financial support to sustain her livelihood as a researcher and also provide vital funds for her research projects.

She says, "AMRF donors ensure there's funding for researchers like me, early in their career, and so often this has kept alive research that goes on to provide incredible break-throughs in medicine and will help so many people live better lives. I can't thank them enough for their support and I know I wouldn't be able to use my skills to help cancer patients without their ongoing generosity."

Testing non-squamous non-small cell lung cancer patients for a gene variation that can help direct their treatment



During her AMRF postdoctoral fellowship, Sandar has studied testing of lung cancer patients for variation in a gene called EGFR. She found that testing has increased since 2011 and more patients benefited from PHARMAC funded targeted therapies, called EGFR-TKIs (dark gray, EGFR-positive patients). At the same time, fewer variation-negative patients received EGFR-TKIs inappropriately. This testing brings benefits to both types of patients.

A family legacy saves a young researcher's opportunity to learn at leading international institution

Because of generous donors like you, dermatologist Dr Bob Chan was able to bring critical surgical skills for skin cancer treatment back to New Zealand.

Dr Bob Chan knew that training at St John's Institute of Dermatology in London would enable him to bring back additional specialist skills to New Zealand – skills that could help patients suffering from cutaneous lymphoma, for which limited specialist help was available here only five years ago.

St John's is an internationally renowned centre of excellence in dermatology research, as well as providing care and treatments across all disciplines of dermatology. Bob was already accepted and willing to self-fund a two-year programme there, but UK rules dictate that UK medical registration cannot be granted to overseas medical graduates unless external funding is also obtained.

That's where a legacy for research ensured that Bob was able to pursue this invaluable fellowship. Named in honour of the noted Auckland philanthropist, businessman and All Black, the Sir Harcourt Caughey Award was created to support medical researchers, doctors and scientists.

From his time as Chair of the Auckland Hospital Board and President of the AMRF, Sir Harcourt recognised the pressing need for financial support of medical and health research. When he retired from leading the AMRF, an anonymous donation was made to help achieve his vision.

"With my successful application for the Caughey Award, the AMRF was able to provide support for my studies and living expenses, so my registration from the UK's General Medical Council could be granted. It simply wouldn't have happened without this award," Bob says.

During his two years at St John's, Bob worked under some of the leading academic and clinical dermatologists in the world.



St John's Institute of Dermatology's Lymphoma team with Dr Bob Chan second on the left.

In addition to completing formal training in Mohs micrographic surgery (a procedure capable of precise removal of the cancerous tissue, sparing healthy surrounding tissue), he participated in many dedicated sub-specialty dermatology clinics.

Topics included cutaneous lymphoma, eczema, psoriasis, immunobullous diseases, photodermatology, and melanoma, gaining in-depth experience in investigations and treatments not yet readily available in New Zealand.

By focusing his UK research work on cutaneous lymphomas, Bob was able to bring new skills back to New Zealand in order to treat patients with these very difficult to manage group of diseases.

Upon returning home in 2017, Bob was appointed to the role of Consultant Dermatologist at Auckland District Health Board. He has relished the opportunity to impart his knowledge to new dermatology trainees. Alongside his consultancy position, Bob has used his new knowledge and surgical skills to treat many patients at his Auckland clinic.

Paul Titchener, Justice of the Peace of Grey Lynn, is one patient who has benefitted from Bob's extensive knowledge. Paul says, "I have nothing but admiration for Bob's skill as a surgeon. I've been privileged to have him conduct several melanoma removals, and have seen firsthand his capability as a teacher in passing on his skills to younger registrars. As a patient, he's made me feel very relaxed

and confident with extremely helpful explanations and a reassuring pre- and post-operative manner. I can't speak highly enough of his skill and experience, and I've no doubt much of that is down to support from the AMRF for his overseas training. It was a most practical application of charitable funding."

Richard Taylor, President of the AMRF Board says, "We couldn't be happier that a great leader's legacy can carry on with excellent young researchers like Bob. Supporting him is critical to the future health of New Zealanders, and his commitment to sharing his skills with future generations ensures the support of one researcher can reach and benefit so many of us."

Your impact on cancer research in the past five years



47 grants for cancer

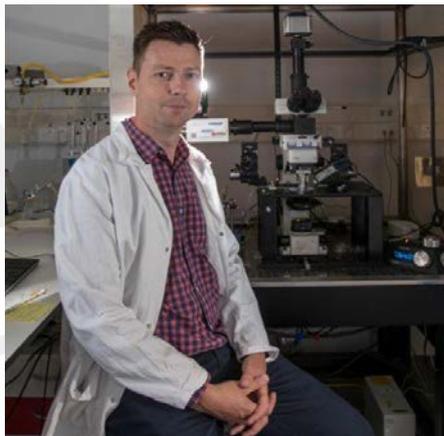


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Cutting edge neuroscience research

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Join us on July 2 for our first day-time, must-see lecture, featuring Dr Peter Freestone (right, top) and Dr Brigid Ryan (right, bottom) talking about their neuroscience research into Parkinson's disease and dementia. Please keep your contact details up-to-date by emailing admin@medicalresearch.org.nz or ringing **09 923-1701**



continued from page 1

The next steps for Tim include establishing a dedicated research lab in this field, the Laboratory for TrAnslational Research in Gastroenterology and Emerging Technologies (TARGET Lab). This group will contribute a new generation of minimally-invasive, electrophysiologically-based diagnostic and therapies for GI disorders, aiming to bring relief to thousands in New Zealand and around the world.

Tim says, "My next career stage will be built upon the work that I was able to do with the support of an AMRF Fellowship and was greatly helped by the generous funding that the Kelliher Charitable Trust provided. I'm extremely grateful to the charitable donors who have made this work possible, and I hope they, and their loved ones, will benefit from my work."



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