

## WELCOME

This year has again presented challenges to us all. And there is no doubt that it has had a negative impact on philanthropy and the certainty for not-for-profits in their fundraising budgets.



With this in mind, I am particularly grateful to our Annual LBBC Golf Day sponsors who maintained their financial support despite the event having to be cancelled for 2020. We look forward to welcoming you all back in October 2021 for the usual extraordinary Golf Day that the Golf Select and Cabrini team puts on each year.

Over the last eight years, the Cabrini Monash University Department of Surgery has developed an innovative, multifaceted program of research designed to improve outcomes for bowel cancer patients by pursuing a personalised medicine approach. Our collaboration with Monash University continues to grow and our colorectal researchers provide updates in this newsletter.

This program consists of a clinical tissue platform with laboratory-based research programs, in addition to a new study to collect patient-reported outcome data.

The take up of testing kits continues to be slow. The Federal Government distributes test kits to everyone over 50 biannually and yet the number of people taking up this offer is always disappointing. In the United States they are extending the distribution of the kits to over 40 year olds and we will be watching developments closely.

Private gifts provide us with the opportunity to further develop our research projects. Your support ensures that these projects continue and that Professor Paul McMurrick can continue their great work.

**Geoff Stansen**

Chair, LBBC Fundraising Committee



## MESSAGE FROM PROFESSOR PAUL MCMURRICK

***"We can confidently predict that in the next 12 months about 1500 people between the ages of 40 and 50 will be diagnosed with bowel cancer and virtually none of them is undergoing screening at the moment"*** Professor Paul McMurrick

Bowel cancer in the Australian community is incredibly common. It affects about 17,000 Australians every year, so on average about 45 Australians every day are diagnosed with bowel cancer. Overall, it affects about one in 20 Australians, about 1 in 18 men and about one in 24 women. To put that in perspective, it is sobering to think that whilst most women are meticulous about screening for breast and cervical cancer, they are actually 12 times more likely to develop bowel cancer than they are cervical cancer, so even though this bowel cancer is more common in men, women certainly should not feel that they are protected or immune.

The National Bowel Cancer Screening Program in Australia was rolled out 10 years ago now and sends stool tests, called FOB tests, to average risk Australians between the ages of 50 and 74 every two years. This was a great step by the Federal Government and a really important initiative, but is still problematic for a number of reasons. Firstly, stool testing is not appropriate for everybody and for people at high risk or patients who have current symptoms such as rectal bleeding; you really need to sit down with a specialist or with your general practitioner and tailor a particular option to your needs.

Secondly, in Australia at the moment uptake of the stool testing in the 'at risk'

group is still less than 40% which means that about two-thirds of the Australian population are not being screened effectively at all. If we could raise the participation rate in the National Bowel Cancer Screening Program from 40% to 80% we could save the lives of at least 1,000 Australians every year, just by this change alone.

For reasons that are not clear, the risk of people developing bowel cancer under the age of 50, particularly between the ages of 40 and 50, has dramatically risen in the last 10 to 15 years and this age group is not currently part of the National Bowel Cancer Screening Program. We can confidently predict that in the next 12 months about 1500 people between the ages of 40 and 50, will be diagnosed with bowel cancer and virtually none of them is undergoing screening at the moment. The national program does not send FOB tests to people under 50 but they can still access them through their GP, pharmacist or from the Lets Beat Bowel Cancer web site.

Finally, we have to consider how we can best treat people with an established diagnosis of bowel cancer, and an important part of research that we do at Cabrini relates to personalised treatment of patients with a newly diagnosed tumour.

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Cabrini treats more bowel cancer than any other individual hospital in Australia and we are one of the few hospitals that have a dedicated department of colorectal surgeons designed to drive bowel cancer research. We are greatly supported by Let's Beat Bowel Cancer, our fundraising and public awareness group made up of a number of passionate supporters including former patients and people like yourselves, Australians who have known and loved someone who developed bowel cancer. It is my great privilege to head up the Cabrini Monash University Department of Surgery. We currently have three full-time PHD postdoctoral fellows working in the department with our surgeons, working on epidemiological aspects of bowel cancer treatment and supporting our data and tissue platform where we can match DNA changes within patients and within tumours to clinical outcome. Particularly, with our organoid platform, where we can independently remove tumours from patients and then grow them in the laboratory and test them against different treatment modalities minimizing risk to the patients themselves. This is the concept of what we call personalised medicine.

#### So what can you do to help?

Firstly we need to ensure that the great work we have been doing over the last five years continues. For that, we need to ensure a steady funding stream. We need to grow the amount we fundraise and the number of donors who provide that support.

Secondly, it is important to look after yourself and make sure that you, as an adult Australian, have a clear strategy for screening for bowel cancer. Not everyone requires colonoscopy and most people can be screened by stool testing alone, but everyone needs an individual strategy based on symptoms they may have, their family history and their own personal history. We encourage each of you to share this message with three of your friends, three people that matter to you and are close to you. Share with them the idea that every Australian adult needs to have a strategy for screening for bowel cancer and encourage them to put this strategy in place.

Minimizing the impact of bowel cancer on Australians is a huge challenge but you can be confident that there are fantastic teams of people working on this at Cabrini.

**Professor Paul McMurrick MBBS**  
Chair, LBBC Management Committee

## RESEARCH UPDATE

### Implementation of electronic patient-reported outcome measures in patients undergoing treatment for colorectal cancer

In Victoria, patients undergoing colorectal cancer treatment are not specifically asked to answer questions about their perspective on symptom and functional outcomes, particularly relating to urinary and faecal continence, sexual function, well-being, and health-related quality of life. The Cabrini Monash University Department of Surgery, led by Prof Paul McMurrick and his team Dr Christine Koulis (Senior Research Fellow and Project Coordinator) and Ms Karen Oliva (Database Manager) are now in the process of launching a Cabrini first initiative.

This initiative will invite patients undergoing treatment for bowel cancer to assess how a health intervention has, over time, affected their quality of life, daily functioning, symptom severity, and other dimensions of health from a patient's perspective through answering a series of questions. The results from this initiative will enhance personalised care and improve outcomes for patients undergoing treatment for colorectal cancer.

### Tissue microarrays for biomarker discovery in colorectal cancer

Tissue microarray is a platform which allows high throughput identification of prognostic and predictive biomarkers allowing accelerated translational research from bench to bedside. The Cabrini Monash University Department of Surgery has undertaken a departmental wide tissue microarray project, involving the transfer of more than 1,200 normal and colorectal cancer tissue specimens retrieved from archived surgical resection samples. Each patient's specimen within the tissue microarray platform is linked to the Cabrini Monash University Colorectal Neoplasia database. This is a multidisciplinary program and encompasses many clinical departments within Cabrini, including surgery, oncology, radiology, and pathology; in addition to external collaborators



including Monash Histology platform and the Abud Laboratory, Department of Anatomy and Developmental Biology, Monash University.

Currently, the constructed tissue microarrays are being tested for various biomarkers, including characterisation of each patient's cancer based on their consensus molecular subtype, a robust classification system utilising comprehensive gene expression profiles. Senior Research Fellows, Dr Christine Koulis and Dr Rebekah Engel, recently presented preliminary findings from the molecular subtype analysis of tissue microarrays at the Royal Australasian College of Surgeons 89th Annual Scientific Congress in Melbourne (10-14 May, 2021). The results presented suggest that the biological characteristics of a patient's consensus molecular subtype may influence the efficacy of therapy. In future, these findings may help to personalise treatment for patients with colorectal cancer and ultimately improve patient outcomes.

This project is partly funded by a Cabrini Foundation Grant of \$30,000 awarded in 2019.

### Dr Christine Koulis and Dr Rebekah Engel

Senior Research Fellows - Cabrini Monash University Department of Surgery

## DR SIMON WILKINS REFLECTS ON THE HIGHLIGHTS FROM THE LAST SIX MONTHS

A large proportion of the work done within the Cabrini Monash University Department of Surgery involves analysing data from our colorectal neoplasia database. The database prospectively collects data on colorectal cancer patients before and after their surgery at Cabrini which allows us, the research team, to examine many different aspects of colorectal cancer in research projects.

Many research projects progressed last year despite the unprecedented global circumstances and local lockdowns. Some of these projects were completed and written up to be submitted to scientific and medical journals. These included a project on patient outcomes in patients aged 80 and above, a project on whether tumour location in some patients influences recurrence rates or outcomes, and a project on the most accurate method to image the extent of the tumour prior to surgery.

The end of the Melbourne lockdown towards the end of last year allowed the resumption of elective surgery which is the source of clinical samples for our numerous laboratory-based projects. Of

prime interest to myself was our project to develop an innovative new laboratory test that cultures thin slices (half a millimetre thick) of tumour tissue in order to test anti-cancer drugs. This work was carried out with one of our Monash University partners.

**This new test, which we believe is not being done anywhere else in the world,** will help us understand the role of the patient's immune system in fighting the tumour and how we can improve certain treatments (known as immunotherapies). Our exciting new data has shown that we can enhance the effect of immunotherapies with the addition of drugs such as ibuprofen to reactivate the patient's immune cells to attack the tumour. We are currently working to confirm these findings as the use of cheap, over-the-counter drugs for fighting cancer could have significant implications for improving patient outcomes.

At the beginning of May, I was lucky enough to present our new findings in a talk to the Royal Australasian College of Surgeons annual scientific congress in Melbourne. Back in January, my colleagues

and I wrote a review article on the immunological aspects of cancers related to our new laboratory test which was published in the Journal of Immunology.

In other aspects, the last few months has also been busy with a number of substantial grant applications to funding bodies for the laboratory-based studies. Earlier this year, I was invited to join the Australasian Gastrointestinal Trials Group Lower GI Working party. This is an international group, full of experts from both medical and scientific fields, which helps the development of clinical trials to ensure they are scientifically relevant and feasible.

Looking forward, the rest of 2021 looks to be an exciting time. We will continue to work on our database projects and will submit these projects for publication in leading peer-reviewed scientific and medical journals. Later in the year, we will also hear the results of our grant applications. We will also look to confirm our findings on the new laboratory test and publishing the results in a leading journal.

**Dr Simon Wilkins**  
May 2021

## RECTAL CANCER ORGANOID PROJECT FUNDED BY THE CASS FOUNDATION

We are pleased to announce that the rectal cancer organoid project, led by Senior Research Fellow Dr Rebekah Engel, recently received almost \$60,000 funding from the CASS Foundation. This project aims to use cutting-edge organoid technology to predict how rectal cancer patients respond to chemotherapy and radiation in order to save up to 25% of patients from having unnecessary, life-changing surgery.

The incidence of rectal cancer accounts for approximately one-third of bowel cancer cases. The standard of care for rectal cancer patients often involves radiation and chemotherapy followed by radical surgery. The impact on quality of life following rectal resection is significant, with patients experiencing sexual and urinary dysfunction, defecation difficulties and alteration of body image. However, up to 25% of patients who are treated with radiation and chemotherapy have no detectable

tumour at the completion of their treatment, classified as a complete response. In the absence of a detectable tumour, these patients could be spared from undergoing unnecessary surgery, preserving their normal rectal function.

This is hugely important to the patient's quality of life, giving them the ability to eat, work and travel with confidence in their bowel function whilst also preserving sexual function. However, surgeons remain reluctant to manage patient treatment with a non-surgical approach, referred to as "watch and wait", as there is currently no standardised technique for identifying patients who achieve a complete response.

This project aims to determine whether we can predict patient response to common cancer treatments using a three-dimensional tissue model of a patient's own tumour, called organoids. Organoids are essentially "mini-tumours" which can be grown in a dish that

mimic the features of the tissue from which they are derived. By establishing organoids from patients with rectal cancer and treating them in a dish with chemotherapy and radiation, just as patients would receive in the clinic, this project aims to identify patients who are likely to achieve a complete response before they undergo surgery, and are therefore suitable for the nonsurgical "watch and wait" approach. This would prevent patients who achieve a complete response from undergoing unnecessary, radical surgery, whilst also sparing the community from unnecessary cost. Conversely, predicting which patients are unlikely to achieve a complete response will provide confidence in the decision to proceed with surgery as a necessary part of their cancer treatment. We have now commenced recruiting patients for this project and we are excited to share our results in due course. We are grateful to the CASS Foundation for their support.



# FUNDING NEED TO SUPPORT STUDY TO IDENTIFY THE BODY'S IMMUNE RESPONSE TO CANCER

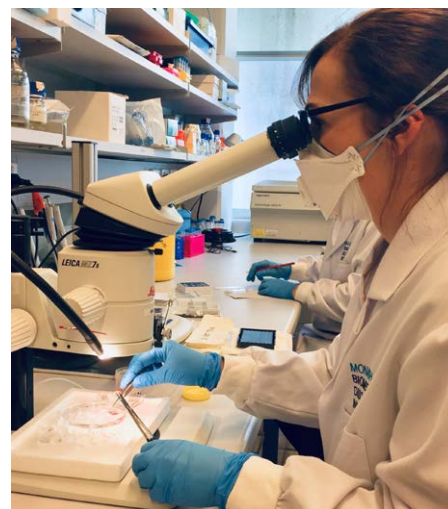
Immunotherapies are the newest class of cancer therapies and have shown a strong capacity in many cancer types to boost a patient's immune response against their own tumour.

However, in colorectal cancer, for reasons poorly understood, immunotherapy does not work for most patients.

Our newest data suggests that the immune system in colorectal cancer is suppressed by a poorly studied cell type called Cancer-Associated Fibroblasts (CAFs). We have found that CAFs directly prevent anti-tumour immune cells from responding aggressively, and we have identified how CAFs achieve this. We plan to use clinical samples stored from a large colorectal patient cohort to identify the number

and type of immune cells present in the tumour, and to test whether the presence of CAFs predicts important patient outcomes such as survival and recurrence. This work will examine the lateral spread of the infiltrating tumour and associated immune cell and fibroblast responses, and we will also investigate the tumour cell-immune response interaction in lymph nodes adjacent to the tumour when the tumour has spread.

This study, in tandem with other projects will help us address several fundamental questions regarding the body's immune response to cancer, including how, where and why the cancer spreads, and whether existing drugs could be repurposed to help immunotherapy work in colorectal cancer.



**Total Funds required for the study: \$40,000**

Save the date

The only piece of the puzzle that's missing is you

2021 LET'S BEAT BOWEL CANCER GOLF CLASSIC  
TUESDAY 12 OCTOBER  
KINGSTON HEATH GOLF CLUB

LET'S BEAT BOWEL CANCER  
A Cabrini initiative

Cabrini FOUNDATION

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