

Impact Of Your Giving

NCC Research Fund
NCCS Cancer Fund
FY2017

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Chairman's message

It has been a very busy year for the Board of Trustees of the NCCS Cancer Fund and the NCC Research Fund as a whole line-up of activities were rolled out during the year.

The SingHealth Fund was incorporated as a Company Limited by Guarantee in September 2016. It was registered as a Charity and obtained its IPC status in March 2017. The Board has been working closely with the SingHealth Fund to ensure that both of its funds are aligned with the umbrella body. The NCCS Cancer Fund integrated into SingHealth Fund on 1st April 2018, whereas the NCC Research Fund will progressively dissolve and transit over.

We greatly appreciate the efforts of former Director of the National Cancer Centre Singapore (NCCS), Professor Soo Khee Chee. We wish Professor Soo well on his retirement as NCCS Director and thank him for his characteristic generosity in donating proceeds from the sale of his book, *Paying It Forward*, to the NCC Research Fund. He is succeeded by another eminent specialist, Professor William Hwang.

We are fortunate to have a strong Board whose members come with varied experience in the corporate world. Their contributions have made my task as Chairman much lighter.

I would also like to record our thanks to Madam Ho Geok Choo, for chairing the NCCS Campaign Steering Committee and all the other donors, volunteers and staff for their support. Together, we can make more survivors!

Dr Charles Toh Chai Soon
Chairman, NCCS Cancer Fund and NCC Research Fund



Medical Director's message

Cancer is still the leading cause of death in Singapore. It is envisaged that by 2030, the number of cases will be at least double that of 2012. The statistics are daunting.

We are encouraged by the fundraising efforts from the community. Ms Sumitra Gopal for example, made a personal commitment to raise funds for cancer research when her mother was being treated at NCCS. Sumitra participated in a 10km run every month, culminating in the Reading Triathlon in the UK on 3rd September 2017. Many people also gave their time and expertise to support our activities. I am particularly proud that NCCS staff remain one of our most committed group of donors. Last year over 60% of our employees made a donation, one of the highest rates in public health in Singapore.

On behalf of NCCS, I would like to thank all our supporters for their kind donations. We look forward to your continued support.

Finally, I would like to thank Dr Charles Toh for his many years of dedicated service to the Board of Trustees, and welcome Mdm Ho Geok Choo, who will chair the Board from 1st September 2018.

Professor William Hwang
Medical Director, National Cancer Centre Singapore

Role of philanthropy at the National Cancer Centre Singapore

By David Mungall, Campaign Director



“Whatever your reason for giving, your gift will make a difference to patients now and in the future.”

Our goal at the NCCS is simple: to help more people survive cancer. As the incidence of cancer rises, the government is investing more in the health budget to meet the challenge. However, there are many needs and important priorities in cancer care and research that remain underfunded. Therefore, the role of our fundraising is to allow our nurses, doctors and scientists to go beyond what public funding alone can provide.

We appreciate that our donors have their own personal reasons for giving. For example, in memory of a loved one who battled cancer. Many other donors are motivated to give out of a desire to contribute to the search for a cure for a particular cancer. Whatever your reason for giving, your gift will make a difference to patients now and in the future.

Fundraising Goals

Between 2012 and 2030, the number of new cases of cancer in Singapore will at least double. The human impact of the steep rise in cancer cases will be felt by many more families. There is now an urgent need to find new ways to prevent, detect and treat cancer.

In 2015, we launched a fundraising campaign with an ambitious target to raise \$150 million to transform cancer care in Singapore. Since then, generous donors have given \$80 million.

We still need to raise:

- \$6 million for financial aid for needy patients
- \$12 million to advance patient care
- \$18 million for medical education
- \$34 million for cancer research to find tomorrow's treatments

How Your Donations Are Used

Donations are used across two main areas: cancer care and cancer research.

Your support for cancer care provides funding across areas including:

- Improvements in infrastructure, equipment and facilities to enhance patient care
- Financial assistance for patients in need
- Education and training of medical, nursing and paramedic professionals to improve patient care and cancer prevention
- Development of communications publications for cancer professionals, patients and the public

Your support for cancer research fulfils three objectives:

- Providing seed funding to help our scientists kick-start worthy and emerging research projects. By doing so, they build a track record and will be able to apply for sustainable competitive grants from government agencies.
- Providing bridge funding between government grant cycles when the need arises, in order to enable our scientists to work with productive momentum.
- Providing advancement funding to enhance research-related infrastructural capabilities, hardware, tools and processes.

By focusing on research projects with these three objectives, NCCS has become an international centre of excellence in cancer research. Thanks to our donors, patients in Singapore benefit directly from research, through faster access to the latest thinking and cutting-edge treatments.

Finding tomorrow's treatments

In an effort to help patients fight liver cancer, four major medical institutions, led by the NCCS, are collaborating to carry out a clinical trial which may lead to the development of a new treatment strategy for this disease.

Part-funded by the NCC Research Fund, this study is the first in the world to combine an immunotherapy drug called nivolumab and Yttrium-90 radioembolisation (Y90-RE). The trial started in December 2016 with the goal of recruiting 40 patients.

Radioembolisation is the use of tiny glass or resin beads containing a radioactive isotope placed with the blood vessel supplying blood to a tumour. Y90-RE is currently used for liver cancer patients who are unsuitable for surgery or liver transplantation. During Y90-RE treatment, radiation is delivered directly to the tumour to kill cancer cells.

Nivolumab, on the other hand, enhances the body's immune response against cancer cells and has shown promising results for advanced liver cancer patients in ongoing studies. In addition, it has been observed that the drug, when combined with radiation, can potentially enhance shrinkage of the treated tumour.

Thus, the aim of the trial is to show that nivolumab can enhance the effects of radioembolisation in liver cancer and further improve outcomes for patients.

“Nivolumab has shown some initial promising activity in advanced liver cancer and studies are ongoing. We plan to study whether nivolumab may help to further enhance the efficacy of (Y90) radioembolisation. If proven so, this will change the way we treat liver cancers with potentially lifesaving benefits for patients,” said Dr Choo Su Pin, a Senior Consultant Medical Oncologist with NCCS and the Lead Principal Investigator of this study.

Liver cancer is the second most common cause of cancer mortality in Southeast Asia and more than 70% of liver cancer cases in Southeast Asia are a consequence of chronic infection with Hepatitis B Virus.

“As there are currently very few effective therapeutic options for advanced liver cancer, there is an urgent need

to find better treatments to improve survival rates. We are grateful for the support of donors to the NCC Research Fund, which enables us to continue working on important research programmes like this,” Dr Choo added.

The trial is conducted in collaboration with three other medical institutions namely Singapore General Hospital (SGH), Genome Institute of Singapore (GIS) and Singapore Immunology Network (SIgN).



“There is an urgent need to find better treatments to improve survival rates.”

The search for new therapies to prolong and improve the quality of life for our patients has always been one of our top priorities. NCCS wants to provide Singaporeans with state-of-the-art anti-cancer therapeutics. Hence, we have initiated investigator-led trials to look into cancer types that are more prevalent in Southeast Asia.

In the last 10 years, immunotherapy has emerged as an exciting area of cancer treatment, particularly for advanced-stage patients. Immunotherapy is more targeted and has fewer harmful side-effects as it harnesses the body's immune system to fight cancer.

The Centre for Cancer Immunotherapy (CCI) is leveraging on its SingHealth Duke-NUS partnership to bring together their expertise and the Translational Immunology Institute, to position the NCCS as a global leader in cancer immunotherapy research.

Why I give

When Melvin's wife passed on at the age of 36, he made a donation to support research into rare and genetic cancers to help others facing similar diseases.

Melvin and his wife, Yan, discovered that she had an aggressive form of uterine cancer. Yan, then 31 years old, was referred to the NCCS where doctors discovered that the cancer was caused by a rare underlying genetic disorder.

Fanconi Anemia (FA) is a rare familial disease where almost all patients develop cancer by the time they are 40. This is due to the body's inability to repair all cell damage. FA also results in low blood counts during chemotherapy.

Through knowing this information, Yan's doctors could avoid chemotherapy drug combinations that would result in extremely low blood counts.

As FA is a disease that is inherited, or passed down through families, Dr Joanne Ngeow, Senior Consultant, Division of Medical Oncology at NCCS encouraged Yan's family to also undergo genetic testing. It was discovered that her 29 year old brother shares the same genetic mutations.

Her brother now participates in a regular screening programme, which can detect cancer early to allow for the best potential outcome.

"It was hard to see my wife suffer during treatment, but her grace and faith were inspiring. She never once complained nor lashed out at me or those around her," said Melvin. "Instead, she crafted handmade cards and boxes to encourage other patients who were battling cancer and made sure that I ate properly even when she could no longer eat."

Melvin hopes to do more to honour his wife's memory and keep her kind and generous spirit alive.

"Witnessing her four-year battle with cancer made me appreciate how precious life is and the importance of making a difference in the world. I am a donor to the Centre for Cancer Genomic Medicine and volunteer with the NCCS to raise funds for patient care initiatives and critical cancer research."



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An estimated average of 5-10% of all diseases have a genetic cause. With increasing awareness of cancer risk and prevention efforts, demand will rise for appropriate, ethical and risk stratified cancer prevention. The Centre for Cancer Genomic Medicine aims to understand the genetic basis for familial and rare cancers in Singapore and the region.

The NCCS is well-placed in the quest to detect, prevent and treat heritable cancers. With an outstanding research and innovation track record, the Centre for Cancer Genomic Medicine will be at the forefront of translational cancer genetic medicine globally.

Why I volunteer

As a 16-year-old, Chong Hui Min had everything going for her. She was filled with energy and was looking forward to a career in healthcare and becoming a doctor. She was in the Girls' Brigade and she would walk the 2-km distance between her home and school in Tampines.

Then one day at the end of 2014, she had a near-fall. This made her aware of a lingering pain in her left knee. "The pain was so alarming that I would wake up in the middle of the night because of it," said Hui Min. Half a year with visits to six different doctors later, she saw a specialist at the NCCS and was diagnosed with osteosarcoma, a rare type of bone cancer, in her left knee.

It was a painful and emotionally draining ordeal for the teenager as she not only had to endure the pain of the chemotherapy sessions, but the treatment also caused disruptions to her studies. Hui Min's left knee was replaced with a 34-cm implant and her mother left her job to care for her. It was a very emotional time for the whole family.

"This cancer journey is not easy, especially if you are diagnosed at such a tender age. When I was first diagnosed, I only had support from a small group of friends because there were no official support groups for teenagers and young adults. But now, with the NCCS Adolescents and Young Adults Oncology Support Group, it is a good platform for us to share our stories, support each other, give and take advices," recalled Hui Min.

Despite the loss of her left knee, it has not deterred her from her childhood ambition to work in healthcare and help others. Hui Min went on to score four distinctions in her 'N' levels, and today, she is pursuing a diploma in pharmaceutical sciences.

"I have always wanted to be in healthcare. Meeting friends in the hospital reaffirmed my ambition as their passion has inspired me a lot. And because I know how painful being a patient can be, I want to be in a position to alleviate the patients' suffering."

Leukaemia remains as the most common type of cancer in children, but brain tumours now make up 20% of cancers for children under 15.

The NCCS puts special emphasis on the psychosocial and emotional wellbeing of our younger patients through the Adolescent and Young Adult oncology programme.

By funding this programme, it will enable the NCCS to take a more holistic approach to improve treatment outcomes for children and young people with cancer.

"This cancer journey is not easy, especially if you are diagnosed at such a tender age."



Why I give

56-year-old Mr Yip Hoong Mun (pictured below) was looking forward to starting a new phase and challenge in his life by embarking on a new career. However, the excitement was quickly replaced by great sadness and concern as his late wife, Ms Chua Lay Hong, received the news in October 2016 that the cyst in her kidney had grown. A biopsy revealed that the once benign cyst had turned malignant. It was later diagnosed as Synovial Sarcoma.

Baffled by the disease, the couple consulted doctors and healthcare professionals who were close friends. Very quickly, they realised the seriousness and implications of this aggressive form of cancer. Despite a brave fight, Ms Chua passed on in January 2017.

Sarcomas are uncommon but aggressive tumours that arise from the bone or soft tissues. They can arise from a wide range of tissue and organ systems in the body and affect patients across different age groups; from young children to the elderly. In Singapore, close to 350 cases of sarcoma, osteosarcoma and gastrointestinal stromal tumours are diagnosed each year.

“Sarcoma is a very uncommon cancer and the understanding of this disease is very limited,” shared Mr Yip. Hoping more can be done to support patients suffering from sarcoma, Mr Yip made a generous pledge gift in August 2017 to support the advancement of sarcoma research, education and patient care in honour of his late wife.



Part of Mr Yip's gift contributes to the NCCS Sarcoma Patient Support Group, which is led by stage-4 Retroperitoneal Leiomyosarcoma Cancer patient, Mdm Wendy Tan (pictured below). A firm believer in the importance of support networks, Mdm Tan greatly appreciates the positivity and resilience a community brings, and the bonds forged amongst members through activities organised by the support group.

“I have chosen to be happy and live my life to the fullest. In spite of my tumours being inoperable, being happy keeps me going. In our support group, we hang out together in attending talks, workshops, movies, eating out, and line-dancing. To the donors, thank you so much for including us, for giving us hope and your kind support. Your contribution helps us to lead better lives. We are most grateful to you.”

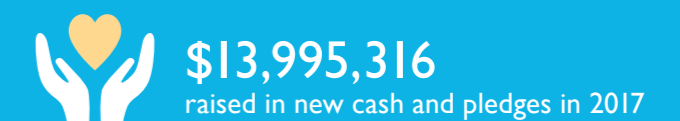


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The NCCS is seeking the support of donors to expand the existing patient care and research programmes for specific tumour types and disciplines.

- Breast Cancer
- Gastrointestinal Cancers (Stomach, Colon, Rectum)
- Gynaecological (Ovarian, Cervical, Uterine) / Urological (Prostate, Kidney, Bladder) / Pelvic Cancers
- Head & Neck (Thyroid, Nasopharyngeal)
- Thoracic Cancers (Lung)
- Lymphoma / Melanoma
- Hepato-Pancreato-Biliary Cancers (Liver, Bile Duct, Gallbladder)
- Oncologic Imaging

2017 Statistics at a glance



How gifts can make a difference

\$1,000 could pay for a week of a Research Associate's time, looking into the triggers of cancer.

\$3,000 could pay for one needy patient and their caregiver to attend our Enreach Retreat, where patients receive information on diet, treatment options, physiological symptoms and treatment as well as meeting others going through the same experience.

\$5,000 could pay for our Geriatric Oncology Scholarship Programme for a week, helping us provide vital training and education to medics in order to improve patient care for elderly cancer patients.

\$8,000 could pay for one month of our Nursing Education and Training Fund, which helps nurses access essential and innovative training programmes.

\$10,000 could pay for an Advanced Practice Nurse's work for a week, as he/she helps women in their 20's and 30's cope with a breast cancer diagnosis.

\$15,000 could pay for a tenth of the cost of an essential Laser Capture Microdissection machine, or one Community Outreach health event, helping us raise awareness of cancer amongst the general public.

\$75,000 could fund an endowed academic award to encourage and recognise rising or established medical stars.

\$2.5 million could endow a Professorship to attract world-leading talent to the NCCS and support research and innovation.

Increase the value of your gift

Gifts are eligible for a 250% tax deduction. Gifts for cancer research or medical education may be eligible for 1:1 matching which doubles the value of your gift.

Making headlines



Study links gastric cancer to protein level

Patients with low DOK6 levels found to survive longer than those with high amounts

Scientists at the National Cancer Centre (NCC) have found a link between the protein level of DOK6 and survival in gastric cancer patients. The study, published in the journal *Journal of Clinical Oncology*, shows that patients with lower levels of DOK6 protein in their tumours survived longer than those with higher levels.

The study involved 19 patients with gastric cancer. The researchers found that patients with lower levels of DOK6 protein in their tumours had a significantly better survival rate compared to those with higher levels. This finding is particularly important as it suggests that measuring DOK6 protein levels could help doctors identify patients who may benefit from more aggressive treatment.



肝癌与草药中‘马兜铃酸’有关

潘勇全 报道 ycpvuo@sph.com.sg

新加坡科学家发现，不少肝癌病例与传统草药中含有的一种称为“马兜铃酸”的物质有关。东南亚地区有56%的肝癌病例或与此物质有关。

这组科学家研究了全世界来自不同地区的1400个肝癌病例，结果通过实验发现，这些癌症肿瘤接触过一种名为马兜铃酸的物质，这种物质使很多基因突变导致癌症；部分传统中药含有这种成分。

这项研究的报告刊登于美国期刊《科学转化医学》，报告指出，这种情况在东亚和东南亚国家最明显。

其中，台湾98个肝癌病人中，就有76个病人的肝癌，带有“马兜铃酸”特有的基因突变指纹，比率高达78%。

中国89个肝癌肿瘤进行化验的结果则显示，47%与这种重要化学成分有关联；我国地属的东南亚区则有56%的肝癌病例或与此物质有关。

来自杜克-新加坡国立大学医学院、癌症与干细胞生物学的教授罗森，是这项研究的领导之一，他说：“这是一个意外的发现。我们没有怀疑过原来有那么不同地区的人，普遍接触过马兜铃酸。”

另一名领导研究的是新加坡国立癌症中心、研究部副院长郑敏展教授，他说：“我们从2013年发表的一份报告跟进研究，当时突破性了解到马兜铃酸在尿路癌所扮演的角色。这项新研究发现确定了马兜铃酸也和肝癌有关。”

新研究报告也指出，含有马兜铃酸的草药一般上用来减肥，新加坡早在2004年就禁止这种成分，而含有马兜铃酸成分的细辛科植物，及于中国台湾制造的细辛粉类产品，已在2014年被令收回。

其他可能还会有马兜铃酸成分的草药包括：青木香、天仙藤、广防己、关木通、寻骨风、朱砂莲。

本地禁卖相关药物

新加坡医疗集团癌症中心的肿瘤内科顾问黄耀荣医生受访时指出，马兜铃酸被世界卫生组织下国际癌症研究机构列为一级致癌物质，其与青木、榆尿管和膀胱癌有关，而美国食品与药物管理局也已列出含有这种成分的植物。

黄耀荣说：“可能因为肝脏负责分解血液中的有毒物质，所以肝脏面对的（癌化）风险较高。”

由于含有马兜铃酸的草药和疗法仍随处可见，新加坡约翰霍普金斯大学的肿瘤科教授张元吉因此指出：“提高公共教育和意识对避免接触（这些草药）非常重要。”

新加坡中药学院院长朱文敏教授受访时说，新加坡中药学院早在2004年，就对关木通和广防己等有毒药材，在大多数来自中药行业从业人员的学员中，开展识别教育。

本地中医师申利华说：“新加坡不可以用这些药物，也买不到。我也从来不用或给病人开过这些药。”

本地研究首次发现含四肿瘤基因型胆管癌治疗未来可更具针对性

胆管癌是一种罕见且极具侵袭性的癌症，其治疗选择有限。新加坡国立癌症中心的研究人员最近发现，胆管癌患者中存在四种不同的基因型，这为未来的个性化治疗提供了新的思路。

研究团队通过对胆管癌患者的基因组进行了大规模测序，发现了四种主要的基因型。这些基因型的存在与患者的预后和反应性密切相关。这一发现对于开发针对特定基因型的靶向药物具有重要意义。

此外，研究还发现，某些基因型的患者可能对免疫治疗有更好的反应。这为临床医生在制定治疗方案时提供了重要的参考依据。未来，随着更多基因型的研究和靶向药物的开发，胆管癌的治疗有望取得更大的突破。

两机构合作研究 癌症免疫系统对治疗反应

新加坡国立癌症中心与生物材料公司ImmunoSCAPE联合发表的文章指出，两个机构的合作也将进一步研究免疫系统对治疗反应。了解免疫系统如何与癌细胞相互作用，将有助于开发更有效的免疫疗法。

研究已取得了初步成果，发现某些免疫检查点抑制剂在特定类型的癌症中表现出更好的疗效。这些发现为未来的临床试验提供了重要的指导。

免疫疗法是一种利用患者自身的免疫系统来攻击癌细胞的新型治疗方法。通过抑制免疫检查点，免疫疗法可以增强免疫细胞的杀伤力，从而更有效地清除癌细胞。

Conference on gene mutation

Over 300 international scientists will gather in Singapore to share their latest findings on p53, the most common gene mutation in cancer.

Known as the "guardian of the genome", p53 works as a major tumour suppressor which defends cells in the body from any form of stress, including radiation, preventing them from becoming cancerous.

However, when mutated, it loses its ability to prevent cancer formation. In fact, it turns on the body by promoting cancer cell survival and hindering cancer treatment.

The five-day event at the Biopolis Breakthrough Theatre starts tomorrow, and is led by the Agency for Science, Technology and Research's (A*Star's) p53 Laboratory and the National Cancer Centre Singapore (NCCS). It will be the first time the International p53 Workshop, which is in its 17th year, is held in Singapore.

Among the findings presented will be a breakthrough by a research team led by Sir David Lane, chief scientist at A*Star and director of the A*Star p53 Laboratory, and Professor Kanaga Sabapathy, head of the division of cellular and molecular research at NCCS. The team has found a way to detect mutant p53 selectively, using antibodies that are specific to each p53 mutant. The technique has been tested on patient samples.

"We are now moving on to find out whether these antibodies can be used as a drug to treat the mutant p53. If successful, it means we can potentially treat almost 50 per cent of all human cancers which are caused by p53," said Prof Sabapathy, who is also a professor at the Cancer and Stem Cell Biology Programme at the Duke-NUS Medical School.

Prof Lane said: "p53 is the most frequent gene mutation in all cancer types, especially in colorectal cancer, the males and females. It affects both men and women."

"We hope that through our extensive research efforts in p53, we will be able to translate our findings into more targeted and impactful clinical outcomes in the next five to 10 years."

Gene mutation helps some cancer patients live longer

NCCS study finds some head and neck cancer patients responding well to a lung cancer drug

新加坡国立癌症中心的研究人员发现，某些基因型的首颈部癌症患者对肺癌药物有更好的反应。这一发现为个性化治疗提供了新的思路。

研究团队通过对首颈部癌症患者的基因组进行了大规模测序，发现了四种主要的基因型。这些基因型的存在与患者的预后和反应性密切相关。这一发现对于开发针对特定基因型的靶向药物具有重要意义。

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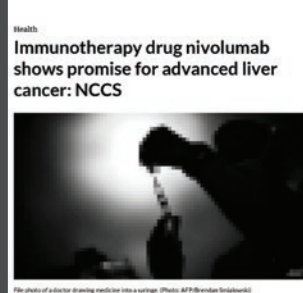
研究团队通过对首颈部癌症患者的基因组进行了大规模测序，发现了四种主要的基因型。这些基因型的存在与患者的预后和反应性密切相关。这一发现对于开发针对特定基因型的靶向药物具有重要意义。

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Asian lung cancer tumours may be tougher to treat: Study

新加坡国立癌症中心的研究人员发现，亚洲肺癌肿瘤可能更难治疗。研究指出，亚洲肺癌患者中存在更多的基因突变，这可能导致对某些治疗方案的反应性较差。这一发现对于开发针对亚洲肺癌患者的个性化治疗方案具有重要意义。



Immunotherapy drug nivolumab shows promise for advanced liver cancer: NCCS

新加坡国立癌症中心的研究人员发现，免疫疗法药物尼伏单抗在晚期肝癌患者中显示出良好的治疗效果。研究指出，尼伏单抗能够增强免疫系统的杀伤力，从而更有效地清除癌细胞。这一发现为晚期肝癌患者提供了新的治疗选择。



Gene mutation helps some cancer patients live longer

新加坡国立癌症中心的研究人员发现，某些基因型的首颈部癌症患者对肺癌药物有更好的反应。这一发现为个性化治疗提供了新的思路。

Key milestones

National Cancer Centre Singapore New Building

The construction of the new NCCS building has been progressing well since the groundbreaking ceremony in June 2017. With the building's new patient-centric design, patients will find more comfort and convenience when they visit. The new building's location will also connect to three MRT lines, the East-West line, the North-East line and the new Thomson-East Coast line, which is expected to open progressively from 2019.

A key feature of the new NCCS building is the new comprehensive proton therapy facility, which will be named the "Goh Cheng Liang Proton Therapy Centre". Proton therapy is a new mode of radiation therapy which uses positively charged subatomic particles. This allows for more precise targeting of a tumour compared to the x-rays used in standard radiotherapy. This may cause less damage to nearby healthy tissues and organs, and hence, potentially, less treatment-related side effects.

NCCS is grateful to Mr Goh Cheng Liang and the Goh Foundation for donating \$50 million towards the Proton Therapy Centre and the Proton Therapy Research Programme.

American Association for Cancer Research (AACR) Awards

For the first time, an Asian team of cancer researchers won the prestigious American Association for Cancer Research (AACR) Team Science Award.

This award honours researchers for their global impact on cancer research. The winning team is an international collaboration led by a Singaporean group comprising Professors Patrick Tan (team leader), Teh Bin Tean and Steve Rozen, as well as colleagues from the Duke-NUS Medical School, NCCS, Genome Institute of Singapore and collaborators from Japan, Taiwan and Thailand. The focus of the team's research is on cancers that are more prominent in Asia and less studied in the West.

These cancers constitute a major global healthcare burden and an unmet medical need. This collaboration has led to multiple collaborative publications and discoveries in leading peer-reviewed journals. Their research has also become an agent of change to government policies.

For instance, their research on aristolochic acid (AA), a compound found in certain traditional herbal medicines, revealed a potential role for AA exposure in the development of liver cancer. Apart from the increased public awareness, this finding has led regulatory agencies to announce stricter policies on use of AA-containing agents.



Left to Right – Dr Ong Choon Kiat (National Cancer Centre Singapore), Dr Khor Chiew Chuen (Genome Institute of Singapore, A*STAR), Professor Lim Soon Thye (National Cancer Centre Singapore), Professor Steve Rozen (Duke-NUS Medical School), Professor Patrick Tan (Duke-NUS Medical School), Professor Teh Bin Tean (National Cancer Centre Singapore)

A day in the life of a NCCS cancer nurse

10 years into her nursing career, Senior Staff Nurse Veronica Teh says she is still living her dream. She believes that nurses and doctors work as equal partners to deliver the best care for patients. SSN Teh tells us about her passion and commitment to her work and her patients.

What is your working day like?

The NCCS Ambulatory Treatment Unit (ATU) is where I step foot in daily to provide for my patients. The ATU cater to patients undergoing chemotherapy. Prior to administering chemotherapy for the patients, I will assess their blood results, symptoms and conditions. During the chemotherapy session, I ensure that all their needs and queries are attended to. To provide a continuity of care, I do follow up calls for newly treated patients as well.

Can you share with us a memorable event in your work as a nurse?

I remember vividly a patient whom I attended to during my second year as a nurse in the ward. She was a long-term patient with highly challenging requests and we dreaded attending to her. However, there was a week where I was assigned to attend to her daily, and I thought work was going to be tough. I took a deep breath every time I entered her room, hoping that she would not make my shift difficult. However, with the increasing interactions with her, I began to understand her more, and she started sharing her life experiences with me. Surprisingly, I began to look forward to seeing her and having a chat every day. It was then that I realised someone might be going through a tough journey that we do not know or understand. The least that we can do is not to be judgemental and help them along the way where our paths crossed.

Why did you choose nursing as a career?

Since a very young age, out of the many TV dramas, I was always hooked on to the characters in the hospital. Looking at how nurses worked and strived hard for the patients gave me the admiration and adrenaline rush, which I still love up till today. I have always dreamed to be in the nursing uniform, making a difference in the life of others despite them being total strangers. After polytechnic, I made the decision to select nursing as a career. I would say it is a dream come true and I am still living my dream.

What are the common misconceptions that people have on nurses?

Even though I have been a nurse for 10 years, people are still asking me why I chose to be a nurse and not a doctor. I truly enjoy the time I get to spend with my patients and the special relationship and rapport with them.

In today's society, nursing is not directed by physicians. In addition to extensive medical expertise, nurses have a unique scope of practice and a unique body of knowledge. Nurses' autonomy in patients care is not only distinct, but equally valuable as the physicians.

How do you think our funds have helped our patients?

Through the NCC Research Fund, our researchers will be able to find more effective treatments for our patients. This will also give patients more treatment options on top of the existing regime available. I believe this will make cancer care more assuring for our patients now and in the future.



A day in the life of a NCCS cancer researcher

Dr Timothy Shuen, a Research Fellow at the NCCS, believes cancer research is much more than bench work. Researchers make a huge impact in the fight against cancer. Dr Shuen explains what he really does at work and his passion for it.

Dr Shuen, can you share with us your daily routine at work?

The first thing that I usually do at work is to clear my administrative work in the morning. My afternoons will be occupied by lab experiments as well as computation work to analyse the data. I also supervise the research officers and interns in their lab work. Occasionally, I attend meetings with other research institutions on collaborative studies. On most days, I knock off at 7 to 8pm, have dinner with my wife, and then continue my computation work at home. My day ends at 3 to 4am.

What are some other misconceptions that people have on cancer researchers?

I think that many people do not understand that research is arduous work that requires a lot of time and effort. We go through many trial and errors in order to find the best way to treat cancer, and we experience a lot of failures before we succeed. Another misconception is that we know everything about cancer research. The truth is, cancer researchers are actually quite specialised in the work they do. For me, my interest and specialisation is in immunotherapy and drug repurposing.

Why did you choose immunotherapy and drug repurposing?

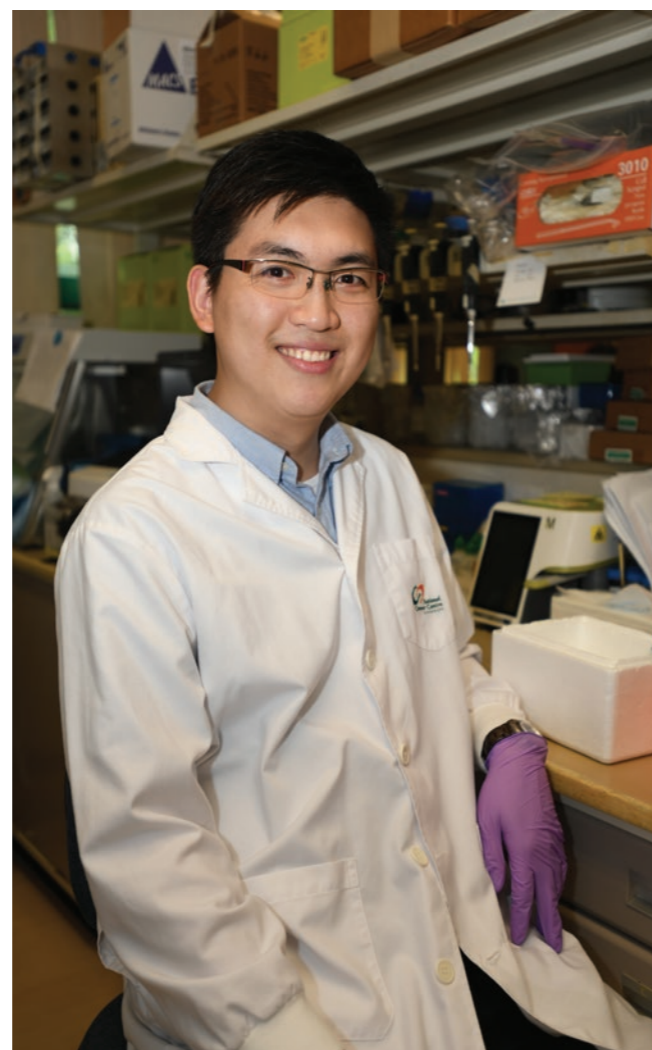
It is a great opportunity for me to learn from one of the pioneers in immunotherapy research, Associate Professor Toh Han Chong. What is interesting about immunotherapy is that we harness the body's immune system to fight cancer and I believe it has lesser side effects. There is also a need for cheaper cancer drugs. Through drug repurposing, I hope that we can find known and cheaper drugs (diabetes drug, for instance) to treat cancer.

You are from Hong Kong. Why did you choose to do cancer research in Singapore?

In Hong Kong, there is little translational research, thus findings in a research are often not converted into clinical practice. In Singapore, especially in NCCS, clinicians and scientists work in close collaboration and deeply engaged in translational research. In this way, we know that our research can bring meaningful outcomes to cancer patients. The cancer patients, whom I pass by on my way to the lab daily, have become my strongest motivation in my research work.

What do you think are your biggest achievements in research?

Our lab has won several national grants, and recently we have been awarded by the Ministry of Health's National Medical Research Council (MOH NMRC), which the study has been recognised for its importance and likelihood of success. Innovative cancer research is required for medical breakthroughs and to develop better treatments for our patients. We are grateful for the philanthropy support that encourages us in our work and drives research forward.



Community fundraising

Singapore-Japan Charity Concert

Six students from the Singapore Japanese Secondary School and Waseda Shibuya Senior High School conceived the idea of putting on a charity concert to help cancer patients. In just four months, the concert came to fruition. The NCCS is privileged to be chosen as their beneficiary with proceeds from the concert going towards cancer research.

The idea of a charity concert came after reading about the groundbreaking of the new NCCS in the newspapers. "I came across some newspaper articles on the NCCS, and also found out that Japanese companies are working very closely with the NCCS to deliver a new building. We thought, perhaps we can also contribute something to help the cancer patients," said 16 year old Takuto Takenaka, who is the concert's Event Director.

The teenage organisers, aged between 12 to 16 years old, were in charge of different aspects, including publicity, event organising and website design, with the close support and guidance from their parents and NCCS' Community Partnership's Special Events team.

The concert, which was held on 2nd December, was graced by the Chairman of the NCC Research Fund, Dr Charles Toh and NCCS' Medical Director, Professor William Hwang. The concert showcased an ensemble of talented and renowned musicians from Singapore and Japan to support this meaningful collaboration.

In total, this extraordinary effort from six young students raised \$10,000 for cancer research.



Honouring our donors

We are pleased to recognise donors who gave \$1000 and above to the NCC Research Fund or the NCCS Cancer Fund (formerly Community Cancer Fund) during financial year 2017. The patients, nurses, doctors and scientists of the National Cancer Centre Singapore are deeply grateful to all donors. We also wish to thank our donors who prefer to remain anonymous.

We have made every effort to list correctly the names of all donors and to honour the requests of donors who wish to remain anonymous. If you have any questions or comments, please contact the Community Partnership office on 6236 9440.

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The Campaign Steering Committee is comprised of a dedicated group of volunteers committed to advancing cancer care and research at the NCCS. Members are advocates and connectors, supporting the fundraising priorities of the NCCS Charity Funds.

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