STRATEGIC PLAN
FOR RESEARCH
JULY 2015 - JUNE 2020

PETER MACCALLUM CANCER CENTRE
SEPTEMBER 2015
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1. INTRODUCTION

This document outlines the plan or framework to guide innovative and ambitious cancer research at Peter MacCallum Cancer Centre (Peter Mac) for the period 2015-2020.

Cancer is perhaps the most important health challenge of our time. Research is vital in reducing the burden of cancer, and for improving treatment outcomes and the quality of life of people living with cancer.

We have made great progress in understanding the biological basis of cancer, particularly as a result of recent extraordinary developments in genomic and other molecular technologies. Personalised medicine, involving targeted drugs and immunotherapy, are now radically reshaping the classification, diagnosis and treatment of cancer patients. Despite these developments, major challenges remain in converting our improved knowledge of cancer biology into new ways to achieve durable responses in patients.

Peter Mac is a driving force in linking patient care with cancer research. Its unique fabric that has research embedded and enmeshed within a public hospital dedicated to cancer care, provides the ideal platform to be a world leading comprehensive cancer centre and excel in translating research findings to the bedside.

Our clinical, laboratory and translational research capabilities will be underpinned by internationally recognised researchers and dovetail with a focused grounding that patient care is at the centre of all Peter Mac’s activities.

This plan will fulfil Peter MacCallum Cancer Centre’s Strategic Direction specifically related to research. The plan outlines our priorities, how we will organise ourselves and the key activities we will undertake.

Key to sustaining our planned initiatives will be the support of donors and diversifying the funding base for research across Peter Mac.

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Research is vital in reducing the burden of cancer, and for improving treatment outcomes and the quality of life of people living with cancer.
2. **CONTEXT**

The strategic plan is positioned in the context of the three key drivers:

1. To align and fulfill Peter MacCallum Cancer Centre’s Strategic Directions.
2. To adopt and implement the key findings of the external review of research across Peter Mac.
3. To capitalise on the opportunities for Peter Mac’s move to its new home in the state-of-the-art Victorian Comprehensive Cancer Centre (VCCC) facility in Parkville.

### 2.1 PETER MACCALLUM CANCER CENTRE STRATEGIC DIRECTIONS

In 2014, Peter Mac undertook to refresh its Strategic Directions. Our new strategic directions resolve to foster leadership and enable Peter Mac to excel as a premier international Cancer Centre. Our four new strategic directions are to:

- Provide the world’s best patient care
- Accelerate discovery and translational research
- Focus on cancer prevention and wellness
- Develop new business models and ventures.

It is notable that excellent research can be a key contributor to all four strategic pillars.

Four enablers have also been identified as being critical to delivering on our vision:

- Collaborative partners and ventures
- Specialised education and professional training
- The best cancer workforce
- Advanced technology and infrastructure.

While research supports and has a role across the entire strategy, there is a specific focus to ‘accelerate discovery and translational research’. This strategic plan principally aims to address this pillar of the strategic directions. In so doing the other three strategic pillars will also be enabled and enhanced.

There are already many instances where Peter Mac’s discoveries have broken new ground in cancer diagnosis and treatment, with life-changing consequences. Expansion and integration of our research efforts spanning laboratory and translational research, a stronger clinical trials capacity, and strategic partnerships particularly with the VCCC Alliance will ensure that more discoveries and innovative models and systems of care benefit people affected by cancer. In so doing, our strengthened research programs and capabilities will raise our international profile.

Patients will seek us out as the ‘go to’ place for the very best cancer treatment and care. In turn, this hive of research and clinical excellence will attract the most talented researchers and clinicians from across the globe, and present many new funding and commercial opportunities.
2.2 STRATEGIC REVIEW OF RESEARCH AT PETER MAC

In part, this strategic plan was instigated in response to the major review of all research activity at Peter Mac, whose Terms of Reference were endorsed by the Peter Mac Board. The review was completed in late 2013 and its recommendations endorsed by the Peter Mac Board early in 2014.

Peter Mac is a public hospital with a culture that embraces and promotes clinical research; it also has embedded within it the equivalent of a large, laboratory-based cancer research institute. While this fusion is ideal for integrating fundamental and translational research with clinical practice, it was recommended that a single, unified research strategy and coherent structure across Peter Mac would maximise opportunity for excellent patient-centred outcomes.

The reports from panels led by Professor Doug Hilton and Professor Ian Frazer were very congruent and found inter alia, the following:

- By international standards, research at Peter Mac is of very high standard, but some areas need renewal, and there are opportunities to expand strategically into new areas.
- Peter Mac’s most impactful and productive tumor stream research is in those themes where clinical activity is closely linked with Peter Mac’s laboratory research: for example, in melanoma, haemato-oncology, breast and ovarian cancers. This ought to be the model to build on in tumor stream based research, recognising that even the largest Comprehensive Cancer Centres do not aim to ‘lead the world in everything’.
- Peter Mac’s Research Division (RD) is very well administered and has cohesive research programs. On the whole, the Research Division Group Leaders performed extremely well.
- The clinical research programs are also generally strong but less well linked to each other, and inconsistently linked to the labs; there are major strengths in Cancer Medicine and Cancer Experiences Research, with exemplars of excellence elsewhere: for example, in pathology, imaging, pharmacy and infectious diseases research.
- There are some significant operational impediments currently limiting clinical research outputs, including access to clinical trials infrastructure and bio-statistics. Resolving these issues and building clinical trials capability should be a priority.
- Research leadership across Peter Mac should be more integrated, coordinated and aligned with the overall strategic aims of Peter Mac.
- There is need for more discretionary funding to support ongoing research. Peter Mac should ensure that the fund-raising strategies of the Peter MacCallum Cancer Foundation (Foundation) are well aligned with Peter Mac’s research needs and aspirations.

A significant part of the intent of this strategic plan is to ensure that the learnings from the 2013/14 strategic research reviews are appreciated and acted upon.

2.3 THE VICTORIAN COMPREHENSIVE CANCER CENTRE - A NEW HOME FOR PETER MAC

The Victorian Comprehensive Cancer Centre (VCCC) was established in 2009 and is a powerful alliance of ten successful Victorian organisations committed to cancer control. The VCCC enables a focused program of work that is multidisciplinary and integrates cancer research, education, and clinical care to accelerate the control and cure cancer.

The VCCC is evolving into a world-class centre of excellence in cancer research, facilitating translation of research findings into clinical practice. In 2016, Peter Mac will move into its new home, the state-of-the-art VCCC Project facility in Parkville. The move provides an opportunity for expansion of research scope, adoption of new initiatives, new internal collaborations and closer links with precinct partners leading to improved health outcomes. In short, this is a major opportunity for further growth through collaboration and strategic alliance.

Our new home is a $1.1 billion state-of-the-art VCCC Project facility, equipped with the latest technology including:

- Purpose built laboratory research clusters which can accommodate over 400 Peter Mac laboratory researchers.
- Space for around 300 dry lab researchers, which will be collocated to maximise opportunities to collaborate and share information.
- An early phase clinical trials unit.
- New equipment and infrastructure.

We should be emboldened to ensure that VCCC’s and Peter Mac’s leadership in cancer research and care are enhanced and extended nationally and internationally. The new building and particularly the powerful coming together of minds within the VCCC alliance members should act as a ‘magnet’ for recruiting the best cancer minds and the brightest students, nationally and internationally.

Peter Mac stands in a unique and favourable position to take advantage of the positive momentum created by the new organisational strategic directions with a focus on ‘accelerate discovery and translational research’, our unique blend of clinical and laboratory research, and the move to our new home in Parkville.
Peter Mac aims to be a world leading Comprehensive Cancer Centre. A fierce pursuit of discovery-based research excellence will allow Peter Mac to break new ground in cancer diagnosis and treatment and, in so doing, change lives.

We will achieve our aims by:

- Building on our lab-to-bedside and bedside-to-lab model. We believe that embedding medical research in the hospital setting is the most efficient and effective way to speed up the translation of fundamental research findings. But it’s not a one-way exchange. The beauty and benefit of collocating researchers and clinicians is that clinicians can also focus research firmly on patient needs, and report new problems back to the lab, cancer experience and health service research groups for further investigation together. Therefore, we will focus efforts on improving the linkages and where appropriate integration of clinical and laboratory research.

- Increasing the scale and breadth of, and support for clinical trials.

- Demonstrating the impact of our research through new discoveries that reduce the burden of disease via improved patient outcomes and enhanced clinical care.

- Fostering innovation and development and application of new technologies.

- Investing in our people and our culture.
  - Gender equity will be promoted.
  - We already have internationally recognised clinical and laboratory researchers and we will enhance our reputation and credentials to further attract and retain world leaders to Peter Mac.
  - We recognise that we need to make some focused recruitments to build our capacity and leadership.
  - Efforts will also focus on the careers of emerging post-graduate students, junior clinicians and post-doctoral fellows.

- Supporting research that puts patients at the core; in other words research focused on patient-reported outcomes – those things that are important for patients.

- Committing to consumer involvement and engagement across the breadth of research.

- Capitalising on opportunities created through partnerships, particularly focusing on VCCC alliance members and existing national and international relationships.

- Investing in identified areas of strategic importance (detailed below).

- Exploring opportunities to diversify and enhance the research funding base, including through commercial developments and new academic sources.

- Advocating for, and promoting health and medical research in the health sector, particularly to address the paucity of funding for research infrastructure in public hospitals.

Our strengthened research programs and capabilities will raise our international profile.
4. PRIORITISATION FRAMEWORK

Clear principles will be adopted to prioritise our initiatives, in order to ensure our efforts and investments produce the best outcomes, measured against our bold aspirations.

The following criteria will be used to select and prioritise effort, initiatives and investments.

1. **Excellence.** Our research will be conducted at a nationally and internationally competitive level, made possible only through excellence in leadership, and will make a positive contribution to our standing in research excellence nationally and internationally.

2. **Strategic advantage.** The research (area of focus) will deliver a strategic advantage to Peter Mac nationally and internationally, including building up selected underdeveloped areas and adopting leading scientific trends.

3. **Translational / clinical focus.** The research should focus on translating laboratory or clinical research to new clinical practice and improved patient outcomes.

4. **Across organisation participation.** Research involves participants across the organisation (laboratory and clinical settings) offering an ethos of broad opportunity for participation, including for consumers.

5. **Clinical need.** The research is driven by the overall needs of cancer patients.

6. **Sustainability.** The research is sustainable in the long term; can leverage new sources of income; is focused on the health service delivery agenda.

7. **Feasibility.** Risks associated with a given initiative can be managed and there is expertise, infrastructure, and resources available, including access to appropriate patient cohorts where required.

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**Prioritisation criteria**

- **Excellence**
- **Strategic Advantage**
- **Translational/c clinical focus**
- **Accelerate discovery and translational research**
- **Across organisation participation**
- **Clinical need**
- **Sustainability**
- **Feasibility**
Excellence in leadership and governance is vital to realising change and to our ambitious aspiration to become a world leading Comprehensive Cancer Centre. A new leadership and governance structure will be implemented, the purpose of which is to:

- Support a unified approach to research across Peter Mac.
- Maximise the opportunity for cross-disciplinary collaboration.
- Ensure alignment with this strategic plan and monitor progress.
- Provide clarity around accountability and responsibility for governance and management.

A six-person Peter Mac Research Executive has been established, with a balance of clinical and non-clinical skills and responsibilities:

- Executive Director Cancer Research (EDCR, Chair)
- Associate Director Clinical Research
- Associate Director Laboratory Research
- Associate Director Translational Research
- Associate Director Cancer Experience and Psychosocial Oncology Research
- Head, Office of Cancer Research

Collectively, the five professorial appointees will comprise three active clinicians, three RD group leaders and a further medical specialist (non-active), and brings both a spread of research expertise and a balance of representation across clinical and lab research.

The role of EDCR will focus on enacting and delivering on this strategic plan, ensuring a smooth and robust transition to Parkville, establishing new collaborations at VCCC and beyond, promoting Peter Mac’s research to the National Health and Medical Research Council (NHMRC), Cancer Council Victoria (CCV) and other funding agencies, ensuring smooth liaison with the University of Melbourne and advocating to government for research in the health sector.

The four Associate Director roles are new, and each will require a set of responsibilities to be articulated and agreed (in progress). The intention is to delegate appropriate sets of tasks to the Associate Directors and to have the 6-person Research Executive take broad responsibility for Peter Mac’s research strategy. Promoting ‘sectional’ interests is not a function of the Executive members.

In addition, a broader representative body (Peter Mac Research Council) comprising the Research Executive members together with representatives from the Divisions of Cancer Surgery and Radiation Oncology, RD and other parts of Peter Mac will be formed, with a total of 15-18 members. It will be important for this body to support the strategic directions set by the executive and have opportunity to bring forward initiatives of their own, fostering and promoting bottom up development of ideas and proposals.

Divisions or research craft groups may also elect to have their own committee to provide feed-forward to the Peter Mac Research Council.

A proposed governance chart for research across Peter Mac is presented in Figure 1. Most of the committees are already up and running.

The Research Advisory Committee (RAC) and the Scientific Advisory Panel (SAP) will provide additional leadership and governance support on behalf of Peter Mac’s Board.

The RAC will provide governance, oversight and guidance to research activities. This will include, for example, ensuring activities are consistent with the organisation’s strategic directions, are subject to appropriate and periodic external review and in monitoring regulatory and financial compliance. (refer Appendix 1 for Terms of Reference).

The terms of reference for Peter Mac’s Research Advisory Committee provide for a Scientific Advisory Panel (SAP) of national and/or international research experts to advise Peter Mac and EDCR on a range of issues related to research strategy. It is envisaged the Panel would meet once each year. The recently adopted Terms of Reference for the SAP are attached in Appendix 2.
Figure 1: Governance for research across Peter Mac.
6. RESTRUCTURE OF LABORATORY-BASED PROGRAMS

The detailed feedback from the reviews of all Group Leaders in RD and of RD’s Research Programs confirmed the excellence and clinical relevance of laboratory research at Peter Mac. However, the need to reorganise and enhance some of the laboratory programs and commence new areas of research was seen as necessary for delivering on the aims of our strategic plan. A number of changes consistent with these aspirations have already been implemented, and further change that requires recruitment and/or promotion of current researchers will proceed when world-class candidates are identified.

The new programatic structure for laboratory research is shown in Appendix 3.

Four of our Programs, Genetics and Genomics, Immunology, Therapeutics and Oncogenic Signalling/Ribosome Biogenesis will be strengthened in various ways. Genetics and Genomics will link closely with the broader new ‘Cross-Divisional’ Program in Women’s Cancers, and new ‘Research Centres’ will be built around our considerable strengths in Immunology and Immunotherapy and in Clinical Cancer Genomics (as described below). The recently established Tumor Angiogenesis Program will expand to build critical mass through collaboration and targeted recruitment, especially in collaboration with Pathology and other areas of clinical research. Re-configuration of the Cell Biology Program will enhance and coalesce the areas of excellence and optimise alignment with our overall strategy.

Major actions include:

- Re-alignment of several labs in Cell Biology with vibrant Programs, existing or new.
- Establishment of a new ‘Radioprotector Laboratory’, which will focus solely on translational and commercial aims.
- A new Program in Lung and Head and Neck Cancer/Tumor Suppression (see below).

- A new Program in Organogenesis and Cancer will increase critical mass and provide a link to mouse and/or clinical translation of findings made in Drosophila (fruit fly), particularly in melanoma research.
- A new Program in Cancer Metabolism, which has been identified as an emerging and vibrant area of research worldwide. The last ten years have seen a remarkable profusion of new targets for cancer therapeutics, many of which had been considered impractical because they represent ‘constitutive functions’ of many normal cell types. Targeting Pol I transcription/ribosome biogenesis is one such example and has been a major strength at Peter Mac. A senior recruitment is envisaged to enable targets in cellular energetics, mitochondrial function and cell senescence to be assessed.
- As identified below, expansion/diversification of capacity is also desirable in:
  - Women’s cancer: A new appointment in Genomics would enhance Breast/Ovarian Cancer Research, link to the Familial Cancer Centre and support critical cohort studies such as kConFab and AOCS. The scope and aims of the broader Women’s Cancer Program across Peter Mac will also need to be defined.
  - Molecular Pathology: Pathology researchers will be located with their RD collaborators in Parkville. Further growth will provide overlap and synergy with the Centre for Clinical Cancer Genomics, as described below.
  - The new Bioinformatics and Cancer Genomics Lab Laboratory received strong endorsement by the review panel and needs further expansion to build a Program around Cancer Bioinformatics and Computational Biology.
7. TUMOR STREAM RESEARCH

Research into a given ‘tumor stream’ is focused on that particular cancer type and involves a broad gamut of research modalities including laboratory research, clinical trials, discipline-based studies in surgery, allied health modalities or radiation therapy, cancer experiences, nursing and psycho-oncology research, epidemiology and health economics research. A crucial aspect is research translation from lab to clinic. The model of clinical care at VCCC will largely be based on 11 nominated tumor streams, providing Peter Mac an opportunity to capitalise on the breadth of its research activities in many cancer types.

The 2013/14 reviews recognised that Peter Mac’s most impactful and productive tumor stream research is in those themes where clinical activity is closely linked with Peter Mac’s laboratory research: for example, in melanoma, haemato-oncology, breast and ovarian cancers. This model provides further opportunities in the future, and opens up avenues for research funding for which Peter Mac should be particularly well placed, for example in NHMRC Program Grant and Practitioner Fellowships. Focusing on specific areas of opportunity is also important, recognising that even the largest Comprehensive Cancer Centres do not aim to ‘lead the world in everything’.

The flexible and inclusive nature of tumor stream research also offers the opportunity to ‘link in’ areas of clinical research that were identified in the research reviews to be limited by isolation from ‘mainstream’ Peter Mac research. Examples include research in survivorship, infectious diseases, pharmacy, radiation physics and some of the allied health disciplines, particularly speech pathology, physiotherapy and nutrition. For example, nutrition and speech pathology research would benefit from greater integration with tumor stream research in head and neck or lung cancer. Survivorship research could link neatly with an initiative in paediatric cancer research.

Given the diversity of tumor streams, and in line with the prioritisation framework (Section 4), we will:

**Build on existing strengths:** augment our programs in melanoma and skin cancer, haemato-oncology, breast and ovarian cancer, and cancer experiences research.

**Strategically invest in selected streams:** lung cancer, head and neck cancer, prostate cancer.

**Embark on new initiatives:** paediatric cancers, psychosocial-oncology, clinical cancer genomics and cancer immunotherapy.

The areas prioritised for development reflect:

- Current and predicted future trends in cancer research, such as clinical genomics and immunotherapy.
- The need for strong and easily accessible enabling infrastructure, including clinical trials, bioinformatics and data management, laboratory platform technologies, access to appropriate patient cohorts and to tissue specimens.
- The need for strategic alliances with other research intuitions, commercial partners, and funding bodies.
- The need to provide a world-class research environment with leading research capabilities and enablers, and thus to recruit high calibre researchers and students.

**Encourage growth and capitalise on opportunities as they arise:** sarcoma, upper GI, lower GI and neurological cancer research, and research into neuro-endocrine tumors. Although there is considerable strength in these cancer types at Peter Mac, growth in these areas should capitalise on, and align with major expertise/enablers among our VCCC partners.
8. BUILDING ON EXISTING STRENGTHS

8.1 MELANOMA AND SKIN CANCER

Research into melanoma and skin cancer more generally is extremely strong at Peter Mac. The world-leading laboratories of Professor Grant McArthur, Dr Mark Shackleton, A/Professor Tony Papenfuss and A/Professor Kieran Harvey have strong links with the Cancer Therapeutics Program led by Professor McArthur and Professor Ricky Johnstone and supported by an NHMRC Program Grant. Over the past 10 years, Peter Mac has also led clinical trials research in practice-changing technologies with B-RAF inhibitors and have played a prominent role in translation into clinical practice of a number of the immune checkpoint inhibitors that target PD-1 and CTLA-4. Greater collaboration with the Cancer Immunology Program and with the Melanoma Program at Olivia Newton-John Cancer Centre is desirable over coming years. Peter Mac has great expertise in cosmetic and reconstructive surgery for skin cancer and melanoma. Recent in the Head and Neck program also provides impetus for research into the pathogenesis of squamous cancers of the skin. Significant opportunities also exist in Merkel Cell Carcinoma, where Peter Mac cares for one of the largest patient populations in Australia.

8.2 HAEMATO-ONCOLOGY

The broad scope and excellence of research into the blood cancers is a major strength at Peter Mac. Cross-disciplinary laboratory research led by Professor Ricky Johnstone and Dr Mark Dawson, with significant contributions from Professors Ross Hannan, Rick Pearson and Dr Sarah-Jane Dawson focuses on the genetic and epigenetic defects that underpin leukemias, lymphomas, myeloma and the myeloproliferative disorders, and which in turn can be targeted therapeutically. The research groups have well developed collaborations with Pharma and Biotech to bolster pre-clinical programs and to establish innovative clinical trials. There are also strong links with several of the Immunology Labs, particularly the Haematology/Immunology Translational Research Lab (HITRL). The clinical divisions boast world-leading clinical trials activity led by Professor John Seymour, Dr Constantine Tam, A/Professor Simon Harrison and Dr Michael Dickinson.

8.3 WOMEN’S CANCER

It is proposed to establish a Women’s Cancer Program. The Program will bring together Peter Mac’s enormous capability and expertise in breast, ovarian and genito-urinary cancer research that spans many laboratories, enormous strength in clinical trials research, strong capacities in surgery and radiation therapy, powerful cohort studies (kConFab, AOCS, Lifepool), our Familiar Cancer Centre, and expertise in molecular pathology, genomics and cancer imaging.

An NHMRC Program grant has recently been awarded to members of Peter Mac’s Genetics and Genomics Program. Grouping these areas of research will offer new opportunities for funding (including fund-raising) through the Peter Mac Foundation, National Breast Cancer Foundation, Ovarian Cancer Australia, and Cancer Australia, as well as international agencies such as the Komen Foundation.

The Program will build on strong existing partnerships with institutions such as the Royal Women’s Hospital, Walter and Eliza Hall Institute, Royal Melbourne Hospital and the Garvan Institute.

8.4 CANCER EXPERIENCES RESEARCH

The Department of Cancer Experiences Research (DCER) provides a platform for supportive care, patient and carer experience, symptom control and healthcare service research at Peter Mac. It comprises a multidisciplinary research team consisting of nurses, psychologists, dieticians, physiotherapists, speech pathologists, social workers, oncologists and applied statisticians, with skills in quantitative statistics, questionnaire instrument development, comparative effectiveness research, and qualitative research design.

Research priorities:

- Cancer Prevention and Control: We need to strengthen our expertise in prevention research to support a long-term reduction in cancer incidence while also working to prevent suboptimal physical, social, emotional and financial outcomes for individuals affected by a cancer diagnosis. This will be achieved by partnering with community, government and NGO organisations, universities and consumer advocacy groups.

- Cancer Wellbeing and Survivorship Research: We will define the predictors of persistent and long-term adverse effects of cancer and its treatment in order to minimise their impact irrespective of treatment outcome. We will evaluate models of care delivery and workforce design that optimise cancer wellbeing and survivorship. We also aim to lead world-class symptom control and rehabilitation research to optimise quality of life outcomes.

- Health Services Research: With our involvement across many tumour streams and clinical services and our collaborations with VCCC partners, national and international research groups, we will drive innovation in health care delivery and workforce engagement by analysing the patient experience and estimating the cost of cancer care delivery.

We aim to attract post-graduate, doctoral and post doctoral researchers to DCER, ensuring we grow capacity as a world leader in these research domains.
9. STRATEGICALLY INVESTING IN SELECTED PROGRAMS

9.1 LUNG CANCER

Lung cancer is by far the greatest cause of cancer deaths, and of enormous suffering across the entire world, yet Australia lacks a single comprehensive cancer research Program in this disease. This situation presents a great opportunity: Peter Mac already has great strengths in clinical lung cancer research involving all of the major clinical disciplines: surgery, radiotherapy, medical oncology, nursing and allied health. Clinical trials research is particularly strong. This includes the excellent leadership of A/Prof Ben Solomon, which has resulted in pioneering the use of novel targeted therapies such as Aki inhibitors in clinical practice and is now collaborating strongly with several other laboratories (particularly the Tumor Suppression laboratory and the Immunology Program). A further impetus to expanding this area has been the surprisingly striking response of some subsets of lung cancer patients to immune checkpoint inhibitors, which demands closer links with Peter Mac’s extensive capability in Cancer immunology. Further support for this collaboration comes from the recent success in attracting funding ($9M) from a major international pharmaceutical company for a clinical trial targeting Lewis Y-expressing lung cancers with adoptively transferred CAR T cells. This initiative might thus also contribute to further building of the Immunology Program (Cancer Immunotherapy Research Centre, see below) and consolidation of our joint venture with Cell Therapies P/L.

The 2013 review panels found the lung program and its leadership to be a significant strength of Peter Mac. Links to the new Lung Stem Cell program at WEHI, which currently lacks close clinical connectivity, is also encouraged. Lung cancer research has also been highlighted as one of two major new initiatives put forward by the VCCC Parkville alliance members for funding by the ACRF.

Peter Mac will also lead the development of health outcomes measures for lung cancer in partnership with MD Anderson as part of the International Consortium for Health Outcomes Measurement (iCHOM).

New collaborations are being formed with Melbourne Health and University of Melbourne to focus on the impact of air pollution on lung cancer.

9.2 HEAD AND NECK CANCER

There is great unmet need in ameliorating outcomes and reducing the burden of disease in head and neck cancer. This is a set of diseases that commonly afflicts Australians of lower socio-economic demographic groups; it generally has a poor prognosis and there is little advocacy or dedicated research funding. As with lung cancer, Peter Mac already has a large clinical practice and great strengths in research in the clinical disciplines, particularly in radiation oncology, medical oncology, radiation physics, in nursing and in allied health, where Peter Mac boasts excellence in nutrition, speech pathology and physiotherapy research. In addition, one of the major clinical indications for the Sirtex P/L-funded commercial research project aiming to develop novel compounds that protect normal tissues against radiation damage is head and neck cancer, where radiation mucositis is often a disabling clinical issue. The 2013 reviews of Peter Mac’s research identified head and neck cancer as an area of research that would benefit greatly from a focused laboratory recruitment to complement our strength in clinical research, which has recently been completed and will focus on signalling pathways that underpin the development of squamous cancers. The new appointment and strategic investment in lung cancer provides an opportunity for collaboration.
9.3 PROSTATE CANCER

There are a multitude of prostate cancer research groups in Melbourne, but they collaborate poorly and opportunities for coordinating research effort and accessing funding schemes dedicated to prostate cancer research are being missed. It is proposed to better coordinate and further build prostate cancer research at Peter Mac with the aim of building an inclusive and sustainable Victoria-wide prostate cancer network. Peter Mac is taking the initiative to lead, based on its:

- State of the art surgery and sophisticated imaging capabilities
- Several laboratories with credible research programs in prostate cancer
- Extensive portfolio of clinical trials in cancer medicine and radiation oncology
- Access to unique pathology specimens and a large and altruistic patient cohort.

Merger of the uro-oncology services at Peter Mac and Royal Melbourne Hospital offers an opportunity to strengthen both research programs and draw in collaborators, particularly at Monash University. Coordination of Peter Mac’s laboratory research with Monash University is a particularly high priority.

An augmented, State-wide prostate cancer program would focus on:

- Laboratory research capitalising on access to unique tissue specimens, PDX, advanced imaging and combined proteomic/genomic and bioinformatics capabilities.
- Greater clinical trials activity, providing better selection of prostate cancer patients for personalised treatments.
- Exploring the molecular and immune biology of treatment responses and treatment resistance.
- Developing advanced imaging, focusing on early detection, staging and treatment response.
- Exploring novel key genetic pathways through linkage with familial cancer centres.
- Augmented services in psycho-social support and research.
10. EMBARKING ON NEW INITIATIVES

10.1 PAEDIATRIC CANCER PROGRAM

Although Peter Mac’s research in paediatric cancers is currently modest, there are significant opportunities for Peter Mac to broker a cohesive national program in paediatric cancer research. This would dovetail nicely with Peter Mac’s major interest in adolescent and young adult cancers, associated psycho-social research programs, and in survivorship research. Peter Mac can offer much in partnership, including access to top-flight laboratory collaborations, GMP-grade clean rooms to produce cell therapeutics, and enormous expertise in immunology, genomics and clinical informatics capabilities.

For example, Peter Mac has actively engaged with the Murdoch Children’s Research Institute/ Royal Children’s Hospital, the Children’s Cancer Institute Sydney and the South Australian Health and Medical Research Institute (SAHMRI) to identify opportunities for collaboration such as haematological cancer, neuroblastoma and brain cancer research. New therapeutics based on targeting N-Myc may form a focus for novel drug discovery campaigns, and access to diagnostic gene panels for paediatric cancers represents an area of rapidly growing need.

An MOU outlining the parameters of one such collaboration (with CCI, Sydney) focuses on:

- Establishing research capabilities that support patient-derived xenografting (PDX).
- Understanding N-Myc biology and exploiting N-Myc as a therapeutic target.
- Establishing Personalised Medicine Platforms in Pediatric Cancers.
- Collaborations in Cancer Immunology, particularly CAR T cell technologies.
- Studies in Survivorship and Psycho-Oncology for paediatric and adolescent patients and their families.
- ICT and similar enablers that link clinical trials data to laboratory and epidemiological studies.

An example of an additional yet mutual benefit arising from the formal collaboration with the Children’s Cancer Institute, Sydney is the funding of post-doctoral researchers at Peter Mac to enhance joint research in Pathology, Cancer Immunology and Bio-informatics as a starting point for future collaboration. The collaborative with all parties also recently contributed to a major application to the Australian Cancer Research Foundation to build technology platforms, to support an Australian paediatric cancer research network.

10.2 PSYCHOSOCIAL-ONCOLOGY RESEARCH

Psychological and social problems are common in individuals with cancer. These problems may predate the cancer diagnosis, or develop following diagnosis and at any time in the cancer journey.

Individuals experience a range of practical, psychological and emotional challenges as a result of their diagnosis and treatment-related adverse effects. One third of individuals with cancer experience have clinically significant anxiety and depressive problems and up to two thirds of patients with cancer experience long-term psychological distress. Those who have undergone chemotherapy, adjuvant therapy or radiation therapy are at even greater risk for depression. The experience of cancer may continue to have an emotional impact on some people long after their initial diagnosis, and have enduring effects on function within the family and more broadly in the community.

Family and carers of a person with cancer also experience significant mental health problems. Studies show up to 2/3 of carers experience psychological distress, and the majority do not seek or receive support. Distress in carers can not only adversely affect them, but has also been shown to increase patient distress and worsen morbidity.

Studies have found high rates of psychiatric morbidity in a range of health professionals, including those working in Oncology. In addition to higher rates of anxiety, depression and substance abuse, oncology professionals have a high risk of experiencing personal distress in the form of burnout.

Centre for Psychosocial Oncology

Peter Mac will establish a centre for psychosocial oncology led by a Professor/ Director. The strategic intent of the centre and program will be to enhance the mental health and wellbeing of individuals with cancer, their families and carers through the provision of world’s best patient care, translational research, and education and training of health professionals. There will also be specific interventions to support and protect our staff, such as education on stress management, self-care and ways to avoid burnout.

As part of the work of the psychosocial oncology program, there will be a focus on research and evaluation.

A detailed psychosocial-oncology program strategy and service plan is under development.
Two new centres for cancer research

Peter Mac’s excellence in genomics, molecular pathology and immunology research is already feeding powerfully into our capacity to deliver new forms of personalised medicine to cancer patients. This alignment will be augmented through the development of two designated centres of research excellence that will hasten achievement and badge Peter Mac as a national leader in both spheres. Both centres will be designed to coordinate a range of existing functions that can be applied to a large number of tumor streams and cancer treatment scenarios.

10.3 CENTRE FOR CLINICAL CANCER GENOMICS

The Centre for Clinical Cancer Genomics (CCCG) is based on collaboration between Pathology, Cancer Research Division and Cancer Medicine Division and will advance genomics at Peter Mac by enhancing discovery programs and improving patient care through diagnosis and treatment. In addition to massive parallel DNA sequencing of patients samples for up to several hundred genes in the diagnostic setting, CCCG will develop further assays to stratify patients for approved drugs and to support clinical trials and research projects. It will align Molecular Pathology and the Molecular Genomics Core Facility to leverage expertise, IT infrastructure and key technology platforms, and link with the Bioinformatics core.

CCCG will provide a strategic program and plan for research, clinical care and partnerships. The CCCG will be positioned as the Australia’s best and pre-eminent cancer genomics research centre. The CCCG will focus, prioritise and coordinate existing functions and resources at Peter Mac to increase the impact of genomics; it will integrate current lab-based clinical genomics with the ‘next and best’ clinical care.

Peter Mac is already part of a number of genomics initiatives nationally and internationally including:

- International Cancer Genome Consortium.
  - For example, Peter Mac plays a leading role in the Ovarian Cancer project that aims to sequence primary and recurrent ovarian tumors primarily drawn from the Australian Ovarian Cancer Study.
- Australian Genomic Health Alliance.
- Melbourne Genomics Health Alliance.

The CCCG will enable Peter Mac’s contribution to these national and international initiatives to be more effective through targeted and strategic efforts.

Critically, CCCG will place research and clinical management at its core. The co-location of Peter Mac clinical diagnostic and genomic research labs and clinical services is fundamental. This will increase access for clinical and research staff at Peter Mac to genomic research, both through participation research and facilitating patient access to therapeutics or new clinical reporting.

The CCCG’s functions will encompass genomic sequencing, the development of new diagnostics, bioinformatics, clinical informatics, patient follow-up and targeted clinical treatments, data collection, and associated research projects along the entire pathway.

The CCCG will develop a large team of molecularly literate clinician-researchers and lab scientists. It will attract talent and train future leaders in clinical cancer genomics. The lab to bedside offering will facilitate the development of targeted agents and their development as clinical agents through collaboration with pharmaceutical and biotech companies.

Additional motivations to establish the CCCG include:

- Access to funding opportunities from government, philanthropy and the commercial sector.
- Development of a clear and consistent message and vision for clinical cancer genomics. This will ensure our message can cut-through in the often-confused debate about genomics.
- Boosting Peter Mac’s reputation as the go-to national centre for cancer genomics.
- Recognition as a leader in clinical genomics education and training.
- Providing support for Peter Mac’s strategic direction; for example the CCCG will accelerate discovery and translational research by providing clinical reports detailing the patient’s genomic changes and a prioritised list of actionable mutations.

Leadership and Commercialisation of Outputs

The CCCG will be led by a newly appointed Director and supported by an executive reference group reporting to EDCR and the Peter Mac Executive. The Director will receive independent advice from independent experts in commercialisation and business planning. The CCCG will develop new and innovative business models and commercial ventures to improve the clinical reporting, develop targeted agents tailored for specified response to genetic mutations, add to clinical trials, activity and help to commercialise Peter Mac’s expertise and services.
10.4 CENTRE FOR CANCER IMMUNOTHERAPY

A new centre for immunotherapy will be established, capitalising on Peter Mac’s excellence and breadth of expertise in immunology and cancer immunotherapy. In just the last few years immune based therapies (cellular and antibody-based) have stormed into focus as being capable of delivering durable responses in patients with some of the most aggressive and advanced cancers – melanoma, B cell lymphoma, lung and renal cancer. In 2013 the prestigious Science magazine named Cancer Immunotherapy as the breakthrough of the year.

Peter Mac houses the largest and most productive human cancer immunology program in Australia, consisting of eight laboratories (>70 researchers and students) supported by many prestigious research grants and fellowships, including an NHMRC Program grant that was the first awarded at Peter Mac, with continual funding since 2003. This Program has recently applied for extension of this funding (~$3M p/a) to 2021, and is short-listed for interview in late September. Another critical strategic asset is Peter Mac’s close relationship with Cell Therapies P/L, the most accomplished producer of GMP-quality cellular therapeutics in the whole of south-east Asia.

The Program has delivered many important discoveries in cancer immunology research, including mechanistic insights into cancer immune surveillance, the molecular and cellular functions of killer T cells and human cancer susceptibility related to immune deficiency states. The Program’s research on adoptive T cell immunotherapy has been translated into clinical trials of acute myeloid leukemia, and was recently the subject of a licensing deal with Juno Therapeutics (US), with the award of $9M to carry out a clinical trial of CAR T cells in Lewis Y+ lung cancer. A drug discovery program funded by the Wellcome Trust ($12.5M) continues to develop perforin inhibitors to block rejection of allogenic bone marrow stem cells administered to cancer patients following high dose chemotherapy.

The centre will broaden its activities and facilitate the translation of laboratory findings into new therapies by:

- Exploring the basis of intra-tumoral inflammation
- Developing novel experimental immunotherapy strategies in preclinical models.
- Translating therapies from preclinical investigation to clinical application.
- Monitoring immune responses in cancer patients to improve our understanding of how and why cells of the immune system respond to cancer. This will include the coordination of immune monitoring for clinical trials of immunotherapies.
- Analysing clinical data to inform basic and translational research.
- Developing targeted diagnostics and new immune-modulatory drugs.

An exciting aspect of immune-based therapies is their broad applicability to many forms of cancer. The immunotherapy laboratory will play a vital role in enhancing and expediting research efforts across many tumor streams by sharing the lessons learnt from treating one cancer to another. In particular, while immune-based therapies have had their greatest impact in haematological cancers, we will identify suitable molecular targets in a range of solid cancers.

In addition, the Centre for Cancer Immunotherapy will:

- Strengthen Peter Mac’s Cell Production capabilities: a state-of-the-art Cell Production Facility has been built in the VCCC research precinct and is technically the most advanced in Australia and South-East Asia. The Cell Production Facility is already producing CAR T cells for immunotherapy clinical trials at VCCC and this program will be greatly enhanced. Export opportunities to Asia are considerable.

- Support partnerships with Pharma to test and develop new drugs. The immunotherapy laboratory attracts significant investment and interest from Pharma, which flows to other research laboratories. Existing drug development programs at WEHI and Peter Mac, and the work of the Cooperative Research Centre for Cancer Therapeutics will be greatly enhanced.

Peter Mac lacks a qualified clinical cancer immunologist and recruitment of an internationally credentialed clinical leader to complement our laboratory expertise is seen as crucial for success.
Clinical trials are the means by which discoveries and potential new treatments across all disciplines are developed and evaluated for their benefit to patients. Peter Mac carries out studies that evaluate an intervention on patients (for example a new test or treatment) and some that do not (biomarker studies, cohort studies, sample collection). This section of the strategic plan deals with trials that feature an intervention.

Clinical trials are vital in early translational research where they provide critical information about interventions including biologic and pharmacological data that supports or refutes hypotheses arising from preclinical research. Clinical trials are also essential to generate data that establishes new standards of care to translate into changes in clinical practice.

Many disciplines recognise that clinical trials are vital to establish a quality environment of clinical care given the robust and detailed processes that are involved in developing, assessing and implementing clinical interventions as part of the trials.

Due to the central role clinical trials play in translating research into benefits for patients and as quality indicators, numerical targets for patient participation in clinical trials have been set. VCCC have suggested 40% as a possible target where currently <10% of patients at Peter Mac are enrolled on a clinical trial. In the US, the participation rate is typically only 3%, while in the UK it is now approaching 12% due to a concerted push by government. We hold that enrolment targets should be linked to research outcomes and impact that may not necessarily require high participation rates. For example a small numbers early phase clinical trial can have enormous impact where the trial establishes a new paradigm for intervention.

The detailed June 2015 strategic review into clinical research in the UK NHS (Brown H, et al: Cancer Research UK, May 2015. http://nhsconfed.org/resources/2015/06/cancer-research-uk-publishes-examination-of-clinical-research-in-the-nhs) provides insights that are likely to be relevant to Peter Mac. These include:

- The need for protected time for clinical staff
- Strengthened training programs for clinical trials researchers
- Revised metrics to better assess the impact of clinical trials on patient outcomes
- Strengthened professional development for Clinical Research Nurses to encourage recruitment and retention.
- Public and consumer engagement to ensure relevance and enhance community awareness.

This and similar papers will inform a more detailed proposal for clinical trials research in coming months.
Strategic Priorities, 2015-2020. We will:

- Develop a world-leading early phase clinical trials capability that is strongly linked to Australian science and investigator-initiated concepts emerging from Peter Mac and VCCC laboratories.
- Enhance tumour-stream based clinical research.
- Lead an internationally recognised program in clinical trials research in cancer immunology closely linked to Peter Mac’s cancer immunology program.
- Support clinical trials in all disciplines including multi-disciplinary clinical trials and cancer experiences research.
- Expand involvement and leadership of clinical trials in early detection and prevention.

Strategic Enablers. We must:

- Mentor, recruit and retain established and emerging clinical researchers.
- Appoint tumour-stream leaders able to deliver world-class research in clinical trials.
- Identify and/or develop funding schemes for proof of-concept early phase clinical trials.
- Provide world-class translational platforms for clinical trials including genomics, imaging, a biopsy service and immune profiling.
- Prioritise establishment of an electronic medical record to enable internationally competitive clinical research.
- Continue restructure of CTU and BaCT to empower research strategy led by individual clinical investigators from all disciplines and tumour streams.

The above activities must be integrated with the broader clinical research efforts of our Parkville clinical partners and the broader VCCC Alliance and will leverage the collaboration of the recently appointed VCCC Research Leads in Melanoma and Haematology. Similarly, it is both necessary and critical for success that community representatives and consumers are consulted, engaged, and involved in the setting of the strategic research direction within each Tumour Stream.
12. RESEARCH ENABLERS

12.1 COLLABORATIONS AND ALLIANCES

Peter Mac will strengthen its existing partnerships and networks and build new ones. Strong strategic alliances can be key to optimising achievement, impact and recognition.

With the overall aim of providing a seamless cancer journey to those affected by cancer we aim to increase research and clinical trial capacity and collaborate with other national and international experts. We aim to be a respected voice in cancer, influencing policy and investment decisions. Examples of strategic relationships and collaboration include:

- We already have many established collaborations with our VCCC Alliance members, and will create many more opportunities for collaboration, innovation and discovery. Current grant applications to ACRF are a prime example. Another is collaboration in lung cancer tumor stream research with WEHI and a new network in pediatric cancer research. Research in all of the tumor streams will focus on VCCC alliances in the lead up to, and upon our transfer to Parkville.

- With Cancer Council Victoria and the Department of Health and Human Services, we can support positive public health and cancer control measures and establish research in these fields.

- Peter Mac has joined the Melbourne Genomic Health Alliance to deliver state-wide cancer genomic services, providing expertise and leadership as exemplified by our large scale cohort study Cancer2015.

- Peter Mac has joined national research organisations, such as the Association of Australian Medical Research Institutes, whereby Peter Mac can advocate for issues that align with our strategic imperatives while promoting cancer research in the health care sector.

- With the Victorian Aboriginal Community Controlled Health Organisation (VACCHO), we will develop specific areas of research and improve services for the indigenous community.

- Peter Mac is actively working with the Department of Health and Human Service and other government agencies to inform new policy and initiatives, such as the Victorian Health and Medical Research Strategy.

- We are strategically partnering with national cancer centres to submit grant applications as powerful consortia. For example, Peter Mac is a member of a consortium submitting in the 2015 NHMRC genomics round, with Peter Mac leading cancer genomics.

- Partnering with the Children’s Cancer Institute Sydney in strategic research initiatives in pediatric oncology. This includes joint studies in Survivorship and Psychosocial oncology and a pediatric PDX program.

- Collaborations with leading international cancer centres. In 2014, Peter Mac entered into a sister agreement with MD Anderson Cancer Centre, with a focus on collaboration on research into patient outcome measures.

- We are increasing our presence at international forums such as the World Cancer Congress, where (in 2014) we participated in the Leadership Forum, co-hosted events with Cancer Council Victoria, hosted international delegates and opened our doors for tours.

- Working with the private sector and exploring commercial ventures. For example, Cell Therapies Pty Ltd is a contract manufacturing organisation and cellular product distributor that is a Peter Mac-incubated commercial venture. Cell Therapies capitalises upon Peter Mac’s laboratory and clinical research programs, which also facilitate access to apheresis collection, manufacturing and imaging for clinical trials subjects.

Early and ongoing engagement is vital to understand our consumers and community’s values and expectations regarding research contribution to cancer control, health care experience and outcomes. Community involvement in the evolution, monitoring and celebration of our cancer research outcomes for patients is an essential enabler to strengthen our research.
12.2 OFFICE OF CANCER RESEARCH (OCR)

OCR encompasses a broad range of functions that provide operational support for research at Peter Mac. Various and diverse functions are funded from a pool of infrastructure funding from the Federal Government Department of Industry that accompanies grants administered through UoM. For this reason, services have been concentrated in RD, but it is highly desirable to provide support for researchers in the Clinical Divisions. Over the past 2 or 3 years a number of research support staff have been placed within the clinical divisions to support research activities. Incorporating these staff under the broader OCR and enabling their access to various systems would build critical mass and optimally align activities with need. This move would also streamline operations across the whole of Peter Mac. The OCR will thus report to the Research Executive and hence the Executive Director Cancer Research.

We will work towards OCR being a centralised resource to facilitate research across Peter Mac, making available to all researchers the services/skills required to conduct laboratory, translational and clinical research and to ensure good governance practices are adhered to.

The OCR would also act as secretariat to committees that oversee research at Peter Mac:

- The Clinical Trials Sponsorship Committee (which ensures appropriate governance and risk management for clinical trials in which Peter Mac is the sponsor) and its sub-committees.
- Pharmaco-vigilance Committee: ensure the safety of all research participants for studies conducted at Peter Mac.
- Clinical Research Quality Committee: ensure that clinical research is conducted in a compliant manner, safely and efficiently whilst protecting the rights of research participants.
- Clinical Research Data Committee: ensure the validity and integrity of data for all studies.
- The newly formed Clinical Trials Sponsorship Committee will focus its activities solely on Peter Mac-sponsored trials.

The OCR will provide a centralised repository of all clinical research allowing for reporting of research metrics and to enable decisions to be made based on risk/finance/strategy etc.
13. TECHNOLOGIES AND INFRASTRUCTURE AND SUPPORTING RESOURCES

13.1 BIOINFORMATICS AND COMPUTATIONAL BIOLOGY

Bioinformatics is indispensable for modern cancer research, as it addresses the fundamental needs of biologists and clinicians to make sense of the highly complex data derived for example, from genomic sequencing, proteomics and cancer imaging.

Given the paradigm of personalised medicine, bioinformatics is also indispensable for defining and prioritising treatment options for patients.

Peter Mac has recognised the requirement for, and importance of bioinformatics and computational biology to research across Peter Mac. Initial progress has been made through:

- The establishment of Peter Mac’s first bioinformatics and computational biology laboratory, facilitated through strategic recruitment and co-appointment with WEHI.
- Establishment of bioinformatics core teams providing a ‘one to stop shop’ for lab or clinical researchers requiring input.
- Placement of qualified part-time informatics specialists in pathology, functional genomics and molecular genomics.
- Integration of bioinformatics into the labs and the clinical spaces (e.g. clinical cancer genomics), a measure that has already had major impact.

It is now recognised that there are structural and resourcing impediments to developing bioinformatics and computational biology at Peter Mac (and contributing to Victorian activity/advances). This is particularly evident given the growth and pace of demand, and issues around recruitment and workforce development.

To address these issues, the following actions will be undertaken:

Establish cancer bioinformatics and computational biology as a Program in its own right. The Program will be developed as a cross-organisation resource with close links to the powerful informatics and computing capabilities at WEHI and UoM, respectively.

- Functional realignment with Peter Mac’s other strategic priorities.
  - Strategic priorities include: gene expression and regulation, familial and population cancer analysis, image analysis, systems biology, precision medicine.
  - The functions of research computing and bioinformatics consulting will be separated and focused into aligned but distinct services, recognising the value of distinct skill sets and ensuring the development of niche expertise.

- Recruitment and workforce development.
  - Strategic senior appointments are required, as is the need to develop ‘home grown’ leaders and capacity.
  - Strategic co-appointments will be investigated.
  - Development of bioinformatics career pathways including targeted recruitment of RHD students.
  - Financial support pathways, including transition from other disciplines to fellowships and grant schemes.
- Operational support requirements.

Strategic funding opportunities.
- Collaborative projects and strategic alliances, particularly with other Victorian institutions.

13.2 COHORT STUDIES

Studies that encompass highly informative and well-annotated cancer samples and patients have emerged as invaluable resources for cancer research. Examples such as AOCS, kConFab and Cancer 2015 have contributed to hundreds of internationally reported studies and (subject to HREC approval) are made available to all qualified external researchers, nationally and internationally.

Cohort studies provide researchers with information on the cause of cancer, insights into environmental, lifestyle and now genetic determinants and its outcomes.

Peter Mac has involvement in:

- Longitudinal studies, supporting the identification of risk prediction and prevention interventions.
- Studies on survivorship, which can provide information on genetic influences, clinical and environmental factors.
- Large scale studies in a variety of cancers, and which support genomic analysis.
- Powerful family cohorts such as those centred in the Familial Cancer Centre and kConFab.

Cohorts are key enablers for a broad range of research projects and programs, and Peter Mac has established leadership and position in a number of key tumor stream areas (e.g. Breast, Ovarian, Sarcoma) based on these cohort studies.

Over the past 15 years, Peter Mac has initiated and provided ongoing leadership and operational support for several of the key cohort studies referred to above. Funding to support these activities has largely been derived from government sources designed specifically for national research infrastructure initiatives of this nature, and from the recovery of the costs of providing data or clinical samples.
to HREC-approved external collaborators. Unfortunately, cuts in many of these funding schemes (eg the National Collaborative Research Infrastructure Scheme, NCRIS) from Federal Government have recently constrained Peter Mac’s capacity to augment these powerful research enablers. Identifying alternative funding sources and revising the fees levied on external users will be critical for ongoing sustainability and future enhancement of this valuable set of resources.

13.3 CANCER IMAGING AND TARGETED THERAPEUTICS

The Molecular Imaging and Targeted Therapeutics Laboratory integrates preclinical and clinical positron emission tomography (PET) and other imaging modalities into a translational research environment with a strong basic science focus. Major aspects of the program include development and validation of novel PET tracers and assessment of the therapeutic response to novel targeted therapies including small molecule inhibitors of oncogenic pathways. There is expertise within the laboratory in the use of radionuclide therapies targeted to receptors and cell surface antigenic targets. The laboratory has a particular interest in melanoma, Merkel cell carcinoma, neuroendocrine tumours and paediatric cancers such as neuroblastoma. In particular, the program looks to integrate molecular imaging into therapeutic selection, planning and delivery with ‘theranostics’ as a key focus.

The Centre for Cancer Imaging has already had a high impact on clinical practice through developing the evidence base for PET in oncology and is well poised to make a major contribution to the understanding of cancer biology while influencing new treatment paradigms. The current strength and breadth of cancer imaging at Peter Mac, its strong integration with NHMRC-funded research programs and its critical importance in so many types of cancer research make its role imperative in support of the various tumor stream initiatives outlined above, particularly lung, prostate and paediatric cancers.

13.4 ‘CASCADE’

‘Cascade’ (CAncer tiS sue Col lection After DEath) is the acronym for a unique Peter Mac initiative that enables terminally ill cancer patients to donate specimens of their metastatic tumors in various organs for research in the hours after they pass away. These tissues are proving an invaluable resource in determining the causes of cancer spread and for studying treatment resistance in advanced disease. As with Peter Mac’s Cohort studies (Section 13.2), funding for this resource has until recently relied in Federal Government schemes, which are now diminished or terminated, necessitating new the identification of new funding mechanisms. The success of ‘Cascade’ in ovarian cancer research has spawned much interest in other cancers including breast, lung, prostate and melanoma, and it is strategically important for Peter Mac that this resource be enhanced over coming years.

13.5 RESEARCH PLATFORM TECHNOLOGIES

Our research is underpinned by innovative technologies that enable a deep understanding of cancer genomics and epigenomics, and cancer cell and molecular biology. Peter Mac has established world class platforms in Molecular and Functional Genomics, Advanced Microscopy, Single Cell Isolation and Analysis, Small Animal Use and Imaging and in Tissue Banking. These facilities provide our researchers with state-of-the-art equipment within facilities that are run by staff with highly honed expertise. Peter Mac will manage all of the research platform technologies in the new VCCC building, providing services to all building partners as a first priority but will also offer excess capacity to other VCCC members to all qualified Australian medical researchers. Reciprocal agreements with our VCCC partners ensure that Peter Mac staff and students have access to platforms such as proteomics, structural biology and chemical screening that are not available in house. Major challenges in running our research platforms include keeping up with the rapid technological advances through acquisition of new equipment; and meeting the cost of equipment maintenance.

Historically we have successfully addressed the challenge of equipment procurement by applying for external funding through bodies such as the Australian Cancer Research Foundation (ACRF) and other trusts and foundations. While we have a track record of success, there remains a risk that these funding sources may contract or change their priorities. The cost of maintenance is being addressed through cost recovery levied on accessing the equipment and expertise, paid from direct research grant funding. The steady increase in these costs and falling NHMRC grant success rates represents a significant risk.

Institutional subsidy is a sector-wide tool used to address this issue and one that to-date has been successful at Peter Mac. Maintaining the scheme, which is funded by ‘untied’ philanthropy is essential for Peter Mac to retain its competitive edge and to attract and retain world class researchers.
14. WORKFORCE

14.1 BUILDING POST-GRADUATE RESEARCH

The crowded physical environment in the labs and the limited dedicated time for clinician researchers has meant that post-graduate student numbers have not grown substantially over the past 10 years. Despite this, Peter Mac has had outstanding success in attracting highly talented clinicians into MD or PhD programs, across a variety of cancer research disciplines, both clinical and lab-based. A key aim over the term of this plan will be to increase the number of higher degree students by >50%. Our new home in Parkville should significantly support this ambition.

14.2 RECRUITMENT OF RESEARCHERS

Lab- and clinically-based researchers are both critically important for realising maximum benefit from Peter Mac’s integrated governance structure. As already amply demonstrated over recent years, working in an environment poised to produce clinical impact and with world-rated colleagues means that ‘star’ recruits can be attracted for relatively modest start up investment.

We intend to continue to enhance Peter Mac as a destination where lab- and clinically-based researchers can capitalise on a genuinely translational research environment. To encourage this type of exchange more broadly and further enliven our Institute, it is critical that lab-based researchers can access and contribute to key clinical forums such as multi-disciplinary meetings (MDM’s) and that reciprocal access is provided to clinicians at laboratory meetings. Greater integration of lab and clinical research needs to occur at Institute seminars and at Grand Rounds.

14.3 RETENTION OF KEY RESEARCHERS AND RESEARCH LEADERS

An enabling environment that supports the careers of both laboratory-based and clinician/researchers is critical to Peter Mac’s ongoing success in research translation. Having arrived at Peter Mac, quite different career risks face medically-qualified and PhD-qualified researchers. By and large, clinicians are guaranteed salary support through HSA but are extremely time-poor. Of late, several clinicians have secured Practitioner Fellowships from NHMRC, or awards such as the Colebatch Fellowship (CCV) or an award from NBCF. Although limited in number, these opportunities need to be realized wherever possible. For clinicians who run labs, this can help enable the necessary 70-80% of time being ‘quarantined’ for research. Commensurate with the recommendations of the Federal Government’s 2012 ‘McKeon’ Review of Health and Medical Research, mechanisms also need to be identified to fund the protected time of clinicians to enable their greater participation in research and to mentor emerging and junior clinician/researchers. More broadly, Peter Mac will identify and pursue opportunities to lead change to promote clinical research carried out in Australia’s public health services, particularly in cancer.

The risks for non-clinicians, particularly those leading lab-based research teams as Group Leaders (GLs) are extreme, as they are required to raise their salaries from external sources. While feasible until recently, the dwindling opportunities for fellowship funding now pose a major risk, both for the GL and for Peter Mac. A number of highly productive senior researchers have recently been lured away to local or interstate research institutions largely on the guarantee of their salary for the next few years. Peter Mac needs to attend to this major risk as a matter of urgency, particularly as the ‘best’ researchers are the first to be ‘head hunted’.

The performance of each GL should be rigorously and independently reviewed every 5 years on a rolling basis. Researchers must continue having incentive to apply for external fellowships but, subject to meeting rigorous performance measures, should not be solely reliant on external Fellowships for their entire salary. Given sufficient resources, a significant proportion of the salary of qualified GLs should be funded internally on a rolling 5-year basis. In the event the GL also secures external salary support, the Peter Mac contribution might continue at a reduced rate, as external fellowships very rarely cover entire salary plus on costs. It is important that strategic fit and maintaining strong research outputs be the prime determinants of continuing employment for GLs, rather than a sudden and unpredictable loss of Fellowship funding.
14.4 PROMOTING WOMEN IN RESEARCH

Largely for historical reasons, there are few female GL’s (25% of the total), and no woman currently leads a Program in laboratory research. We need to be pro-active in promoting women into GL roles, and to more generally support women scientists at every career stage.

A number of actions have commenced or are about to commence:

1. Four new women GL/TL’s have been appointed recently and future recruitment to senior roles will pro-actively short-list women.

2. Talented senior post-docs or other senior female researchers/administrators are being mentored into leadership roles.

3. Emerging clinical research leaders will be mentored by other highly qualified clinician/researchers and be supported to take on added responsibility.

4. Academic clinicians based outside RD should receive honorary appointments at GL or TL level, and be provided with the means to collaborate with lab-based programs.

5. EDCR is leading a new Gender Equity Committee tasked with taking measures to address gender equity at Peter Mac. This committee has broad representation across stages of career. Peter Mac has also joined like-minded institutions in the Women in Science Parkville Program (WiSSP: Florey Institute, UoM, MCRI, Doherty Institute and WEHI).

14.5 A DEFINED CAREER STRUCTURE FOR ‘NON-ACADEMIC’ RESEARCHERS

Most research technology platforms are led by high performing and amply qualified staff members that elect to support the research of their lab-based colleagues. Similar endeavours are now forming around translational research, and in performing in vitro/in vivo studies to test novel therapeutics. To support these individuals, many of who are women, a special career path has been developed to enable promotion to Level D (equivalent of Associate Professor), as is permitted under the HSUA 3 EBA. Where appropriate, Technology Platform Leaders will also be encouraged to collaborate in research projects, apply for grant funding and fellowships, and co-supervise students.

An enabling environment that supports the careers of both laboratory-based and clinician/researchers is critical to Peter Mac’s ongoing success in research translation.
15. COMMUNICATION AND ADVOCACY

Research at Peter Mac will be supported by a greater emphasis and focus on communication, advocacy, promotion and awareness. In turn, these tools will promote the ‘practice-changing’ and ‘paradigm-shifting’ nature of our research, and promote the health care sector more generally as an appropriate recipient of government investment in research translation.

A number of specific initiatives have been prioritised:

• Increasing the capability and use of digital technologies to:
  - Promote and raise public awareness of Peter Mac’s research achievements.
  - Build appreciation and awareness of Peter Mac’s research leaders.
  - Maximise fundraising potential.
  - Grow clinical trial awareness and participation.
  - Attract the best researchers and clinician/researchers from around the world.
  - Better present Peter Mac’s research capabilities on our website, in turn translating to a higher social media profile.

This approach will be developed as part of Peter Mac’s overall digital strategy, currently under development.

• Strategically enhancing the impact of our advocacy. Advocacy can accelerate the impact of discovery science and the availability of new cancer treatments to benefit the community and position Peter Mac as a leader in cancer research. Current priorities include the Medical Research Future Fund, NHMRC funding schemes (particularly relating to fellowships and programs grants), funding ear-marked for hospital based research, lung cancer and air quality, supporting research careers with a focus on young researchers and women in research. Advocacy initiatives will align with the Peter Mac Advocacy Policy Principles.

• Promote and showcase our work by sponsoring events and conferences:
  - Peter Mac is revamping Grand Rounds to share knowledge, promote our work and facilitate new partnerships and alliances.
  - Peter Mac will seek opportunities to host events that showcase our achievements and capabilities, and to acknowledge our donors and the Foundation.

• Focus on relationship building with partners and stakeholders, including key strategic alliances:
  - Key partners include: the VCCC alliance, government, other Australian MRI’s.
  - Lead national research consortia and take part in international consortia (including clinical trials) and funding proposals where appropriate.
16. RESOURCING AND SUSTAINABILITY

16.1 FUNDING FROM THE ACADEMIC SECTOR

The funding landscape from key agencies such as NHMRC is currently unfavourable, with grant success rates at historic lows and the NHMRC Fellowship Scheme under sustained pressure. Peter Mac’s decades-long excellent performance in NHMRC funding (typically around double the national success rate in project grants and the majority of RD Group Leaders supported by Fellowships) has been a key to our growth and excellence to date, but the current scenario poses considerable risk, particularly as more and more incumbents lose Fellowship support.

Diversification of our funding base will be critically important in coming years, with a likely greater dependence on philanthropy and the potential for greater income from the commercial sector, to support both research per se and Peter Mac’s financial position more generally. Both these funding sources are discussed below.

Also critical for the continued viability of Peter Mac’s research will be to advocate for research infrastructure payments being attached directly to grants, or for a new and separate mechanism to support the indirect costs of research in the health sector. There is currently a yawning gap between government’s ambition to derive maximum benefit for patients from NHMRC funded research, and facilitating such an outcome by supporting translational and clinical research in the healthcare sector. Indeed, many structural impediments currently make this ambition a pipedream.

On an optimistic note, Peter Mac’s model of clinical care and the interwoven nature of our clinical and translational research provide a strategic advantage that much of our competition lacks. Many of NHMRC’s grant schemes now allocate points specifically for clinical impact, a criterion that Peter Mac applicants can generally approach with confidence. Likewise, the emphasis on collaborative research gives us an edge, as many of our strongest research programs have been built on the basis of collaboration and integration of research effort.

With this in mind, it is proposed to:

• Build on our achievements in securing 5 year NHMRC Program grants. Remarkably, Peter Mac already hosts four Programs: Immunology (Immunology/Immunotherapy, commenced in 2003; Angiogenesis in Cancer, and Oncogenic Signalling, both of which commenced in 2013; Women’s Cancers, to commence in 2016). This is significant given the success rate of our peers and competitors: the whole of UoM currently has just nine such Programs. Credible applications in breast cancer research, lung/head and neck cancer research and possibly prostate cancer research should be achievable over the next three or four years, particularly if we partner strategically with VCCC collaborators.

• Become more strongly competitive in applications to the Clinical Research Excellence scheme, through consultation with successful groups and careful preparation of impactful applications.

• Provide longitudinal mentoring for all NHMRC Fellowship incumbents to maximise chances of further appointment. This will also involve mentoring of appropriate clinicians to apply for Practitioner Fellowships from NHMRC, and to link clinicians with NHMRC Program applications such as those listed above.

• Take every opportunity to apply for commercial grants such as Development Grants.

• Take every opportunity to apply for international grants.

• Take every opportunity to apply for philanthropic grants that support (in particular) acquisition of capital equipment and if possible, associated recurrent costs.

16.2 PHILANTHROPY

Funding from the Peter Mac Foundation has always been critical for the success of Peter Mac’s research. Accordingly, it is very important that researchers wholeheartedly support the Foundation’s efforts at fund-raising, and in turn, that the Foundation is aware of the specific needs of researchers as these may vary from time to time. Effective partnering should result in greater philanthropic income and in turn, to additional promotional opportunities that the Foundation might use to generate more income. Where possible, providing the maximum flexibility by having donated funds ‘untagged’ to a specific purpose is desirable. Likewise, Peter Mac should work with the Foundation prospectively to prepare a menu of prioritised needs, in the event that a donor insists on their gift being tied to a specific project.

There are a number of distinct types of philanthropic support received from the Foundation, and it is important that the funds be used strategically in every instance:

Untagged funds: these funds are generally raised to support research infrastructure such as operational costs of running technology platforms (but generally not capital acquisitions). In recent years, a small proportion of these funds have also been allocated to specific initiatives such as personalised medicine and for boosting operational support for clinical research in the Office of Cancer Research. This approach supports research endeavours for which grant opportunities are not generally available, and thus assist Peter Mac to build an excellent research environment that will allow us to attract and retain top post-graduate students, clinicians and researchers.

The new Research Executive will have responsibility for allocating untagged funds in a manner consistent with, and in support of this strategic plan, subject to approval by the Peter Mac Executive and CE.
Tied funds: these funds are often tied to an individual clinician (or occasionally a lab-based researcher) and are used at the discretion of the recipient. Where possible, and particularly where large donations are envisaged, it is becoming increasingly important to ensure that the funded activities are aligned with Peter Mac’s overall research strategy, and that a small proportion is put aside to cover associated institutional overheads.

Grants-in-aid: the Foundation currently allocates approximately $700K p/a to small grant applications that are assessed and ranked by internal and transparent peer-review.

Other funding: the Foundation has recently agreed to allocate approximately $200K p/a specifically for attraction and retention of key researchers.

Growth in all types of fund-raising income, particularly in untagged funds is critical for growth and future success. Naturally, this includes the timely and effective implementation of this strategic plan.

16.3 RESEARCH COMMERCIALISATION

A key pillar of Peter Mac’s new Strategic Directions is the development of new business models and commercial ventures. A key mechanism to deliver on this strategic direction is to develop productive partnerships with industry and the commercialisation of our research. This is critical not only for the financial well being of Peter Mac; partnering with industry it is the only feasible way of translating many of our research discoveries into new widely available diagnostics and therapeutics.

Peter Mac has a long history of partnership and engagement with biotech and Pharma, largely a reflection of our internationally recognised research and clinical excellence. New impetus to partnering arises from the fact that Pharma now commonly outsources R&D, who are increasingly reliant on academic groups to suggest new targets and emerging technologies.

These partnerships have already provided for Peter Mac:

- New targets and therapeutics being tested in clinical trials.
- Research funding through contracted research.
- Income more broadly via licence fees, sponsored research, industry grants, consultancies.
- Technologies and new therapeutics taken to market and commercialised, such as cellular reagents via Cell Therapies Ltd.

In considering Peter Mac’s rationale for greater industry partnership, the following should also be borne in mind:

- Early engagement is necessary as Peter Mac’s research is generally early stage and a partner is required to fund R&D and protect IP.
- Engagement should never be at the cost of research excellence and integrity.
- Where possible, publication in academic journals should continue.
- Resources are needed to move from the concept stage to a robust business case.
- External advice and expertise may be needed to secure contact with and facilitate relationships with industry players.

As a part of Peter Mac’s strategy on building new business models and commercial ventures, a critical requirement will be to increase our strategic investment in Peter Mac’s Technology Transfer Office and related functions. A separate paper on this topic has already been presented to RAC earlier this year.
17. PERFORMANCE MEASUREMENT

Measurement of performance will enable us to assess whether our actions are achieving the aspirations, as well as providing guidance and direction.

A set of key achievable has been developed. These actions will be reviewed regularly by the research executive and inform decision-making and management of research at Peter Mac. The actions will be updated as required to reflect progress, and changes in policy or priorities.

18. IMPLEMENTATION AND NEXT STEPS

This research strategy is designed as a five year framework for research at Peter Mac. Pending feedback from the Peter Mac Executive, RAC and the Board, the strategy will be ready for implementation.

Implementation will involve:

- Additional engagement to refine the plan, including workshops and presentations in specific tumor streams. A brief description of this process to date is at Appendix 4.
- The development of detailed plans for specific initiatives, including:
  - A concept document for the Centre for Cancer Immunotherapy.
  - Clinical trials, which is being led by Clinical Trials Optimisation Working Group.
  - Commercialisation of Intellectual Property.
  - Development of more detailed and quantitative performance measurement indicators.
  - Development of a plan to adequately resource the proposal.

The responsibility for implementation will be shared and fully owned across Research Executive. Progress on implementation will be reported to RAC, Peter Mac Executive and Peter Mac Board (annually, following specific and focused advice from SAP).

A review will be undertaken after 3 and then 5 years.

The research strategy is intended to be a living document and will therefore be updated in response to changes in priorities and the research/clinical environment.
The Peter MacCallum Cancer Centre’s (Peter Mac) Board of Directors must ensure that the Peter Mac complies with Section 65S of the Health Services Act 1988 (the Act) in conducting all its activities and functions.

To provide appropriate governance of all research activities conducted at Peter Mac, the Board established a Research Advisory Committee. These Terms of Reference specify the purpose, membership and operation of the Research Advisory Committee.

**Purpose**
The Research Advisory Committee will provide advice on a range of issues, including:

a. having oversight of all research activities at Peter Mac, to ensure that appropriate strategic planning processes are in place and implemented effectively;

b. ensuring that research activities at Peter Mac are:
   i. broadly consistent with Peter Mac’s overall strategic directions (as refreshed from time to time) and broader Government cancer research priorities;
   ii. subject to regular and robust external review; and
   iii. represented and promoted at various levels of Government, at appropriate forums and in the wider community.

In addition, the Research Advisory Committee will:

c. support, through the provision of advice and guidance, all research activities conducted at Peter Mac;

d. in conjunction with other Peter Mac Board committees, monitor compliance of all research activities at Peter Mac with all relevant:
   i. Peter Mac policies and procedures (including appropriate risk management strategies and probity arrangements); and
   ii. legislative requirements;

e. review, on a regular basis:
   i. progress on the research aspects of the comprehensive cancer centre being established at Parkville;
   ii. current and prospective research collaborations/partnerships;
   iii. current and prospective research commercialisation opportunities;

   iv. metrics of research performance (including peer-reviewed grant funding and publication records, as well as comparative analyses with peer institutions); and

   v. strategies to retain, as well as identify and attract high-quality research staff; and

   f. receive and review regular reports on all research activities at Peter Mac from the Executive Director Cancer Research and the Executive Directors of Cancer Medicine, Radiation Oncology and Cancer Imaging, Cancer Surgery, Clinical Services and Cancer Nursing, plus other senior clinicians/researchers, as appropriate.

**Membership**
The Board of Directors is responsible for the appointment of Research Advisory Committee members.

The Board of Directors shall appoint at least two members of the Board to the Research Advisory Committee (one of whom shall be appointed Chair by the Board of Directors).

In addition, the Research Advisory Committee shall consist of:

- Three (3) external experienced research/clinical research leaders; and
- Two (2) external experienced community/business leaders.

**Terms of Appointment**

- The Chair shall be appointed by the Board of Directors for a period of two (2) years. Following review, a Board Chair may be reappointed for up to two (2) further two (2) year terms, but may not serve as Chair for a total of more than six (6) years.

- External members are to be appointed for a period of three (3) years, with an option of a further three (3) year term, as mutually agreed.

- Peter Mac directors’ appointments are to be reviewed annually by the Board of Directors.

**Attendees**
The following Peter Mac staff will be required to attend all meetings:

- The Chief Executive;
- The Chief Operating Officer;
- The Executive Director Cancer Research;
- The Manager Intellectual Property & Development;
- The Chair: Divisional Research Executive (or equivalent body, to be notified);
- A senior clinician researcher;
m. A Director of a Clinical Division, if not covered above; and
n. The Research Advisory Committee’s Corporate Secretary.

Invitees
The following Peter Mac staff will be invited to attend meetings, on a rotational basis:

a. A Director of Cancer Medicine;
b. The Director of Cancer Surgery;
c. The Director of the Department of Radiation Oncology Cancer Imaging; and
d. The Executive Director Cancer Nursing and Allied Health;

In addition, the Research Advisory Committee may request a presentation, or expert advice, from any Peter Mac staff member, or from any external researcher, clinician researcher or representative of a relevant organisation.

Quorum
Four (4) members, including one Peter Mac Board Director.

Scientific Advisory Panel
The Research Advisory Committee will establish a Scientific Advisory Panel.

The Research Advisory Committee will review the Terms of Reference of this Panel at least once every two years and will advise the Board of Directors of any proposed amendments.

The Panel will meet at least once per year.

Research Advisory Committee Panels
The Research Advisory Committee will establish two Panels, as follows:

- Commercialisation Advisory Panel; and
- Probity Advisory Panel.

The Research Advisory Committee will review the Terms of Reference of these panels at least once every two years and will advise the Board of Directors of any proposed amendments.

These panels will only meet if the Research Advisory Committee so resolves. Each panel, when convened, will be chaired by a member of the Research Advisory Committee.

The Research Advisory Committee may establish other such panels, as a need arises.

Meeting Frequency
The Research Advisory Committee Chair will convene meetings quarterly and any additional meetings considered necessary or appropriate to carry out the Research Advisory Committee’s duties.

In the absence of the Research Advisory Committee Chair or appointed delegate, the other Board member, if in attendance, is to chair the meeting.

Reporting
The minutes of each Research Advisory Committee meeting shall be provided to the next meeting of the Board of Directors after the relevant Research Advisory Committee meeting. At the Board meeting, the Research Advisory Committee Chair, or appointed delegate, shall report to the Board (in a verbal report with unconfirmed minutes where possible) on all relevant matters and appropriate recommendations for noting or approval by the Board.

Review of Terms of Reference
The Research Advisory Committee will review their Terms of Reference annually and advise the Board of Directors of any proposed amendments.

Review
Last Reviewed: November 2014
Next Review: November 2015
**TERMS OF REFERENCE**

**Purpose**
The Terms of Reference for the Research Advisory Committee of Peter MacCallum Cancer Centre require that Peter Mac appoint a Scientific Advisory Panel (SAP). Most of the world’s highest achieving research institutions have a SAP to provide advice to their Institution’s Board, Executive and Senior Scientists on a range of issues related to setting and reviewing research strategy, assessing levels of achievement and recruitment/retention of key researchers and research-active clinicians.

Peter Mac recently completed a far-reaching strategic review of all of Peter Mac’s research, and is soon to relocate to its new home among its VCCC partners at Parkville. Peter Mac’s Board and Executive has also mandated a new research strategic plan for the next five years, and it is critical that the plan should be well aligned with the recently enunciated Strategic Directions for the whole of Peter Mac.

**Membership**
The members of SAP shall be highly qualified Australian or international scientists and clinicians who are qualified to advise Peter Mac on a wide range of scientific endeavours relevant to cancer.

The Chair will be an independent, highly respected and internationally credentialed scientist or clinician/researcher with a breadth of knowledge and extensive experience in performing and leading cancer research.

There will be six (6) additional members who have significant international reputations and/or experience in research leadership, and can therefore provide specific advice on a field/s of cancer research relevant to Peter Mac. In particular, the membership shall collectively have specialised knowledge and experience of:

- Laboratory Research (at least two members);
- Clinical Research and Cancer Clinical Trials (at least two members);
- Research Translation and research commercialization; and
- Research into Nursing and Allied Health, Cancer Experiences Research, Survivorship and/or Psycho-oncology.

The membership shall include at least one member who holds a senior research leadership position at either a health service or an independent MRI.

At least one member should be employed outside Australia (ideally).

The SAP may from time to time also call upon the expertise of additional clinicians, scientists and/or any experts from any other field to assist with decision making in a specialised area.

**Other attendees**

- Chief Executive or nominated Executive (CFO);
- Executive Director Cancer Research;
- Up to two additional Peter Mac senior scientists or clinician/researchers (by rotation);
- Manager, Research Commercialisation/Technology Transfer Office; and
- Head, Office of Cancer Research

**Duties**
The duties of the SAP include, but are not limited to the following:

- providing advice to Executive Committee, EDCR and senior researchers on the research strategy (including alignment with the strategy endorsed by Peter Mac’s Board), recruitment and retention of key staff, programmatic initiatives, major collaborations, progress against strategic endeavours, strategic interactions with key stakeholders;
- evaluating and providing feedback on overall, collective (labs, programs) and individual research performance in relation to metrics of research achievement including publications, peer reviewed grants and fellowships, conference presentations etc;
- evaluating and providing feedback on the impact of Peter Mac’s research on the care of cancer patients and on cancer control nationally, regionally and globally;
- advising on building Peter Mac’s post-graduate research programs and similar training and accreditation programs;
- if requested by RAC, assess the performance of EDCR and the senior research executive;
- advising on the composition and equipping of research enablers and research platforms relevant to laboratory, translational and clinical research;
- advising on IP protection, research commercialization and external funding opportunities;
- advising on growing/leveraging revenue from the academic, business and philanthropic sectors; and
- providing advice on any other relevant matter.

Duties of the SAP do not include performing the 5 yearly review/s of research at Peter Mac, which will require a separate process. However, RAC may elect to invite selected members of SAP to be nominated for the 5 year review panel.
**Reporting**

The SAP shall report to the Research Advisory Committee of Peter Mac.

**Meeting Frequency**

The SAP shall convene annually, unless otherwise determined by RAC. The most likely timing of the meeting would be mid-late November when grant results have been released.

**Term**

The Chair shall be appointed for 3 years, and may be re-appointed for one additional term of up to 3 years. Other members shall be appointed for a single 5-year term, with the option of serving up to but no more than 2 further years by mutual agreement.

**Quorum**

50% of the SAP membership.

**Review**

This Framework will be reviewed every two years.
APPENDIX 3: LABORATORY PROGRAMATIC STRUCTURE

Executive Director Cancer Research
Prof. Joseph Trapani

Associate Director, Laboratory Research
Prof. Ricky Johnstone

Laboratory Research Programs

Head & Neck/ Lung/Metastasis Program
- Tumour Suppression
  Prof. Ypal Hapal
- Molecular Therapeutics & Biomarkers
  Prof. Ben Solomon
- Metastasis Research
  Prof. Robin Anderson
- Cell Cycle and Cancer Genetics
  Assoc. Prof. Patrick Hembert
- Cell Signalling in Head & Neck Cancers
  Dr Cherbel Darido

Cancer Genetics & Genomics Program
- Cancer Genetics
  Prof. D. Bowell
- Cancer Genetics
  Prof. Ian Campbell
- Cancer Biology & Surgical Oncology
  Prof. Wayne Phillips
- Bioinformatics & Cancer Genomics
  Assoc. Prof. Tony Papenfuss

Cancer Immunology Program
- Cancer Cell Death
  Prof. Joseph Trapani
- Killer Cell Biology
  Dr Eija Vaskelainen
- Immune Signalling
  Assoc. Prof. Sarah Russell
- Immunotherapy
  Assoc. Prof. Philip Darcy
- Immuno Innovation
  Assoc. Prof. Michael Kerchow
- Haematology Immunology Translational Research
  Dr Paul Nissen
- Immune Defence
  Dr Jane Ollers
- Differentiation & Transcription
  Prof. Rob Ramsay

Oncogenic Signalling & Ribosomal Biogenesis Program
- Cancer Signalling
  Prof. Rick Pearson
- Molecular Oncology
  Prof. Grant McArthur
- Growth Control
  Prof. Ross Harman
- mRNA Mechanisms & Cancer
  Dr V. Wickramasinghe

Tumour Angiogenesis Program
- Receptor Biology
  Prof. Marc Achen
- Endothelial Regulation
  Prof. Steven Stacker
- Molecular Pathology
  Prof. Stephen Fox

Cancer Therapeutics Program
- Gene Regulation
  Prof. Ricky Johnstone
- Molecular Oncology
  Prof. Grant McArthur
- Molecular Pathology
  Prof. Stephen Fox
- Cancer Epigenetics
  Assoc. Prof. Mark Dowson
- Cancer Development & Treatment
  Dr Mark Shackleton
- Molecular Biomarkers & Translational Genomics
  Dr Sarah Jave-Dawson
- Translational Breast Cancer Genomics
  Assoc. Prof. Sherene Lu
- Molecular Imaging & Targeted Therapeutics
  Prof. Rod Hicks
- Translational Research
  Dr Carlsson Callahan

Organogenesis & Cancer Program
- Cell Growth & Proliferation
  Assoc. Prof. Kieran Harvey
- Stem Cell Growth Regulation
  Dr Louise Cheng

Cancer Metabolism Program
- Radiation Protection*
  Prof. Roger Martin
- Industry Incubator

*Industry Incubator
APPENDIX 4: CONSULTATION AND DEVELOPMENT

The strategic plan was informed by two key documents:

- the Peter Mac Strategic Directions; and
- the major review of all research activity at Peter Mac, completed in late 2013.

The development of these documents involved extensive consultation, information exchange and knowledge development to the effect that the development of the Strategic Plan for Research is timely and well informed.

In early 2014, an extensive program of consultation took place including:

- Several presentations to the Peter Mac Executive.
- 8 presentations and forums by EDCR and the Research Executive to the broad Peter Mac research community, including forums for specific clinical disciplines.
- >15 submissions from researchers at Peter Mac across the organisation.
- A 2 day intensive Research Retreat, drawing participation from over 90 staff from Peter Mac.
- Several further half-day seminars are planned, the first two in prostate cancer and in lung/head and neck cancer.
- Engagement by all research laboratory group leaders and senior clinical researchers.