

# FIVE YEARS OF RESEARCH INVESTMENT IN PROSTATE CANCER

## AN EVALUATION REPORT



PCFA would like to recognise the Movember Foundation as the key funder of its National Research Program.

 Prostate Cancer  
Foundation  
of Australia

## DATA SOURCES AND METHODOLOGY

### **Data used to perform an evaluation of PCFA's Research program was collected from the following sources:**

1. Research Program Access database 2007-2012
2. Cancer Australia PdCCRS data (prostate cancer funding section)
3. Annual reports
4. Collaborative Research Updates 2007-2012
5. Media records and scientific forums
6. Think Tanks

### **The following mixed methodology was used to evaluate research investment to date:**

1. Standardised quantitative analysis (i.e. used to show distribution/allocation of funding, Research Program outcomes, expert review process)
2. Case studies (i.e. used to illustrate quality of funded research and outcomes using numerous sources of information)
3. Think Tanks (i.e. used as major focus groups to gather a wider point of view about the research program, its purpose, progress and value to all stakeholders)

A message from the CEO	4
A message from the Chair of the Research Advisory Committee	5
Executive summary	8
Overview of research expenditure 2007-2011	10
Funding by Common Scientific Outline	11
Funding distribution by state and administration institution (2007-2011)	12
Top ten funded universities and institutions	13
Overall success rate	14
People we fund	15

## KEY PERFORMANCE INDICATORS (KPIs)

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Research Programs Key Performance Indicators (KPIs)	16
Program achievements against the set KPIs	17
Young Investigator Category	17
Concept Grant Category	18
Project Grant Category	19
All PCFA Research Program Categories	20
Priority driven Cancer Research Scheme (PdCCRS) - Project Grants	22
Summary of KPIs and their status	23
Global location of PCFA's external assessors	24

## OUTCOMES OF RESEARCH FUNDED THROUGH PCFA'S RESEARCH PROGRAM

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CASE STUDY 1: Young Investigator Category	26
CASE STUDY 2: Concept Grant Category	29
CASE STUDY 3: Project Grant Category	32
CASE STUDY 4: Enabling Grant Category	35

## APPENDICES

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Appendix 1 - Research Investment 2007-2011	38
Appendix 2 - Peer reviewed published papers 2007-2011	44

# A MESSAGE FROM THE CEO



Prostate Cancer Foundation of Australia is celebrating the fifth anniversary of its National Research Program, a structured funding mechanism that provides much needed financial support helping researchers to accelerate the pace of discovery in the field of prostate cancer. This report analyses the achievements and overall outcomes of this major investment.

Since its inception in 2007, 136 projects at a total value of 30 million dollars were funded through this program.

**At PCFA we are indebted to our donors, big and small.**

We are particularly thankful to *The Movember Foundation* and its Board, for their vision, generosity, continuous support and determination to change the face of men's health in Australia

and in the world. The basic science National Research Program would simply not exist without their support. Movember support has also enabled PCFA to enter a very successful partnership with Cancer Australia to fund translational research and clinical trials.

We thank *Cancer Australia* for their rigorous review and funding of some of the most competitive projects in the field and look forward to many years of fruitful collaboration.

We thank *BHP Billiton* and *Cure Cancer Australia Foundation* for their support in the Young Investigator Category and *Mayne*, *National Australia Bank*, *Brambles*, *Westpac*, *KPMG*, *Smorgons*, *Leightons*, *Southern Cross Equities*, *Commonwealth Bank*, *Mazda Foundation* and *APIA* for their vision and partaking in a movement aimed at pioneering changes in men's health.

PCFA thanks past and present members of the *Research Advisory Committee (RAC)* and *Professor John Mills* for their insight and expertise in establishing the program and *Dr Miranda Xhilaga* and *Ms Anne Maerz* for their diligence and hard work. PCFA is also very grateful to the RAC members and international and national expert reviewers for donating their valuable time in assessing submissions for funding received each year.

We acknowledge the incredible effort made by the *research community* in the last five years to ensure that advances in the field continue and their contribution to this report and wish them all the very best in their quest to reduce the suffering of men from this insidious disease.

Last but not least, we acknowledge and thank the *Australian men who are going through the prostate cancer journey* for their courage and determination, their active participation and input into various research programs conducted nationally.

A handwritten signature in black ink that reads "Anthony Lowe". The signature is written in a cursive, slightly slanted style.

**Dr Anthony Lowe**  
*Chief Executive Officer*



# A MESSAGE FROM THE CHAIR OF THE RESEARCH ADVISORY COMMITTEE – PROF JOHN MILLS

## The establishment of a National Research Program for Prostate Cancer Research

Although PCFA had been established well before the current millennium, it didn't really take on a significant national role until after 2000. Starting in 2003, and as a result of generous grants from The Movember Foundation and its own fundraising, PCFA began to accumulate significant funds that enabled the initiation of a research program underpinned by a research committee.

Some highly significant grants were allocated – for example, research fellowships to two young scientists, Susan Henshall and Lisa Butler (both of whom became independent and respected prostate cancer scientists), but the program suffered from lack of overall goals or specific priorities, guidelines for submission of applications, a schedule for applications and announcements of successful applications, and a rigorous and transparent review process.

In 2006 I was approached by Graeme Johnson and Tony Costello – then the Chair and a non-executive director of PCFA, respectively – about the possibility of my establishing a more structured research program for PCFA, which I would chair. A substantial reason for choosing me for this role was that I was an established medical scientist who had recently founded a boutique histopathology practice with two pathologists, and who as a result had undertaken significant research into prostate cancer.

The first logical step towards establishing PCFA's Research Program was to survey current prostate cancer research in Australia. This survey built upon a previous review by Health Technology Pty Ltd, commissioned by PCFA. The review of the current funding for prostate cancer research, specifically that provided by the National Health and Medical Research Council (NHMRC), showed that there were a significant number of internationally-prominent senior scientists working prostate cancer in Australia – part of Australia's highly-regarded medical research community,

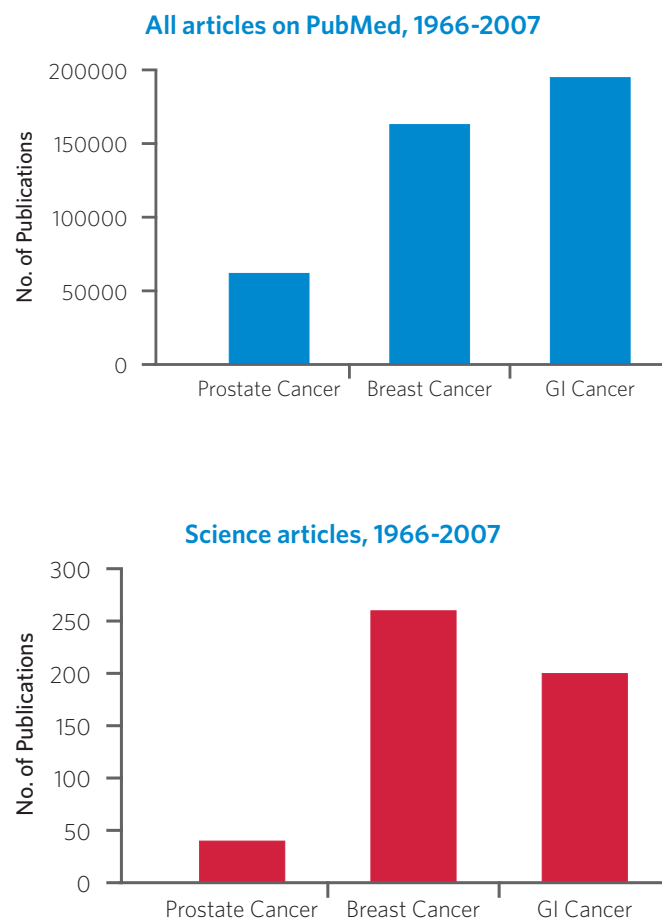
but it also highlighted the deficiency in research activity and funding, both nationally and internationally, compared with breast cancer – which causes deaths in women at about the same rate as prostate cancer does in men.

These data provided further evidence to PCFA's National Board that there was good reason to initiate a more structured Research Program. A Research Committee (now the Research Advisory Committee) was established in early 2007. Working with that committee and the PCFA Board, I established the overall goals for the Research Program, specific priorities, grant categories, application forms with instructions for applicants; and a schedule for receiving applications, reviewing them and reporting application outcomes. We also committed to giving



Prof John Mills,  
Research Advisory Committee  
Chair since 2007

# A MESSAGE FROM THE CHAIR OF THE RESEARCH ADVISORY COMMITTEE – PROF JOHN MILLS



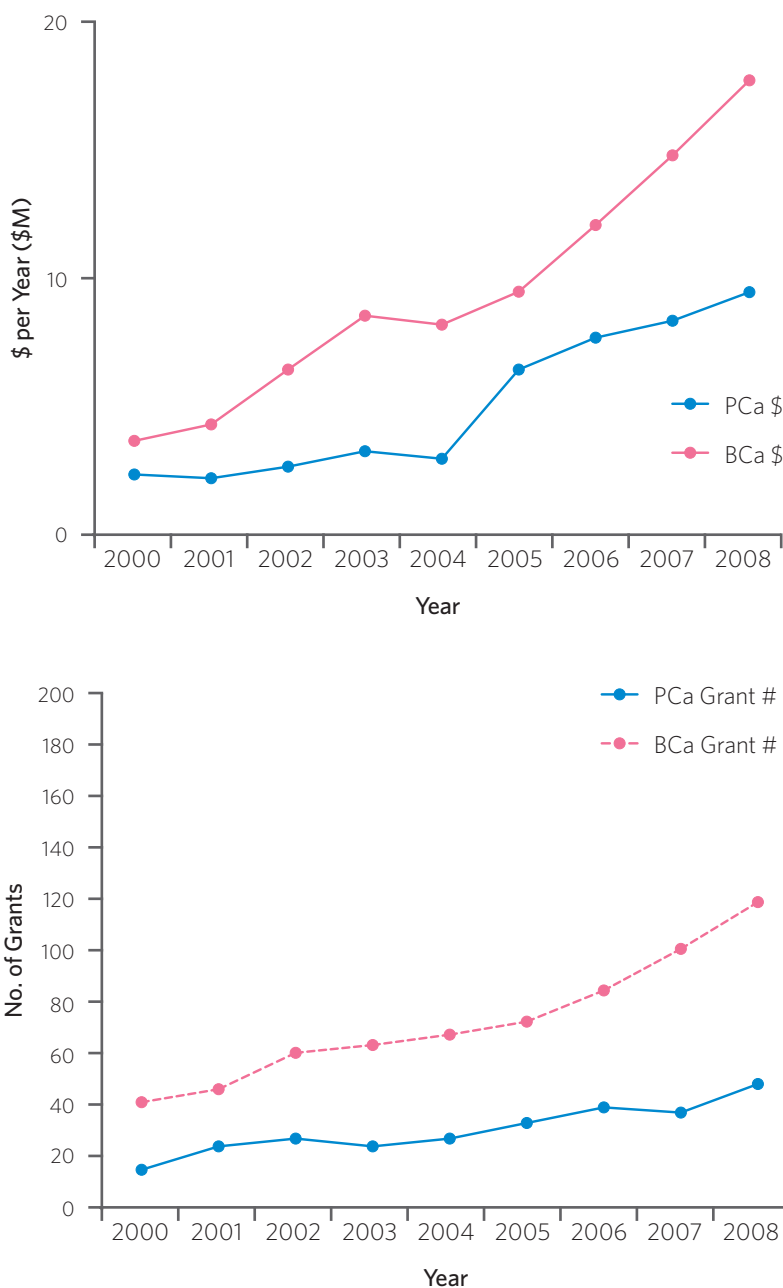
**Figure 1.** A PubMed Central search for research output 1966-2007 showed major differences in the number of published peer reviewed articles in the field of prostate cancer research compared to breast and gastro-intestinal cancers (A). The number of breakthroughs measured by the number of publications in high impact journals (i.e. Science) was equally low (B).

both successful and unsuccessful applicants written feedback on their application from both assessors and Research Advisory Committee members. The 2007 Program also worked with Cancer Australia for the first time, initiating what is now an established and productive relationship.

The shortage of independent prostate cancer scientists in Australia was perceived as a major shortcoming. Hence the Research Program established two flagship grant categories to remedy these deficiencies, one to support the transition of young investigators to research independence (the Young Investigator grants) and one to encourage senior scientists, with hypotheses, expertise or technology that would be useful for the prostate cancer research effort, to initiate

prostate cancer research (the Concept grants). In addition we offered to fund meritorious research by established prostate cancer scientists (Project grants) and to support the purchase of equipment which was critical to further prostate cancer research by groups of scientists working in that area (Equipment grants).

Although the funding we have provided to Australian prostate cancer research (approximately \$5M annually) may seem relatively small, it has significantly increased the total funding available considering that in 2007-2008 only ~\$8M pa was being provided to prostate cancer research by the NHMRC. The catalytic effects of PCFA grants are shown in the successes that our Young Investigator grantees



**Figure 2.** Total NHMRC expenditure and total numbers of grants awarded to prostate cancer scientists from 2000-2008 was substantially lower compared to total expenditure and number of successful grants submitted by breast cancer scientists.

have achieved in becoming fully independent with their own NHMRC funding, and in the successes of our Concept grantees that are now actively engaged in prostate cancer research, again with independent NHMRC funding.

This review will fully validate the principles on which the program was established six years ago. It will also show clearly the importance of the partners that have enabled this program to be successful, particularly The Movember Foundation, BHP Billiton, Cancer Australia and Cure Cancer Australia Foundation.

This evaluation process included several meetings of key researchers and other stakeholders, held in 2012, including individuals affected by prostate cancer; these meetings have

provided external guidance as to the structure, goals and priorities of the PCFA Research Program going forward - in short, establishing a medium-term (5-10 year) research strategy to be review, and hopefully approved by the Research Advisory Committee and the PCFA Board.

In sum, PCFA can be proud of the achievements of its structured Research Program since 2007. We hope that future achievements will have a significant, salutary impact on prostate cancer, through discovery of new diagnostics, new biomarkers and new therapeutics, and specifically through discoveries which will improve the length and quality of life of men with prostate cancer, whether the cancer is localised, locally-invasive or metastatic.

# EXECUTIVE SUMMARY

PCFA Research Program staff and Prof. John Mills



Owing to new research findings and development of new therapeutics, more men than ever before are now surviving prostate cancer. With such dramatic increases in scientific knowledge in the field researchers must continue to meet future challenges.

The *mission* of PCFA's structured Research Program is to provide the much needed funds that will help researchers to accelerate the pace of discovery for prostate cancer, and to apply their research results to patients in a timely manner. As stated in previous reports, the program started in early 2007, with grant application forms and instructions available

in April, the deadline for receipt set in early July, and the Research Advisory Committee meeting set in late October with results announced in early November after approval by PCFA's National Board. This first round of applications and grant awards established the Research Program's schedule in all future years. It also established our policy of having the Research Office identify external assessors – predominantly from overseas – to review applications, and to nominate at least two Research Advisory Committee members to be “spokespersons” for each application. Ranking of applications for funding is done at a face-to-face meeting in Melbourne.



In recognition of the absolutely essential Movember funding for the program, all funding is badged as Movember research grants.

Upon its establishment the Research Program was advertised to all Australian universities (through the Organisation of Australian and NZ Medical Deans - [www.medicaldeans.org.au](http://www.medicaldeans.org.au)) and all Australian medical research institutes (through the Association of Australian Medical Research Institutes, founded by Prof John Mills in 1993 - [www.aamri.org](http://www.aamri.org)).

Research investment has been focused in two distinctively different programs: PCFA's National Research Program and the Priority driven Cancer Research Scheme (PdCCRS) administered through Cancer Australia.

In the five years of its operation, this Research Program has worked towards *encouraging* young investigators to undertake research into prostate cancer, *supporting* those investigators as they mature toward independent scientists; *stimulating* senior scientists, not working in the field of prostate cancer, but with expertise and unique technology that may be relevant to prostate cancer research, to bring innovative proposals to PCFA; *supporting* rigorous proposals for research that will provide direct, tangible benefits to patients with prostate cancer in a relatively-short timeframe and *enabling* the purchase of much needed equipment, which will facilitate innovative research in prostate cancer.

A major goal of this program has been the provision of a logical, consistent and transparent framework and schedule for submission, review and selection of applications for research funding. Through rigorous peer review the program has been able to support the very best Australian research into prostate cancer. From the very beginning, every effort has been made to ensure that allocation of PCFA funds is guided by a clear strategic focus and a set of specific research priorities, based on deficits in prostate cancer research personnel and funding.

From 2004-2011, PCFA has awarded funding to 136 grants nationally. Of these 136, from 2007-2011, 132 new grants were funded or co-funded by Movember. The total PCFA Research Program Investment from 2007-2011 is \$29,957,385. The difference is accounted for by the following supporters: Cure Cancer Australia Foundation (CCAF) - \$380,000; BHP Billiton - \$330,000; Australia Post - \$126,500. On 31 December 2012, 100 out of 136 grants awarded were still active (*Appendix 2*). A comprehensive list of these research grants is provided in *Appendix 1*.

Completed research grants have contributed to new knowledge in the prostate cancer field globally via publication of more than 170 peer reviewed articles, most published in journals with impact factor 5 and above.

- These new research findings have been presented in more than 200 national and international forums.
- More than 90% of principal investigators funded from 2007-2011 have reported an academic promotion.
- 80% of Young Investigators that have completed funding are now independent scientists heading their own laboratories.
- 80% of senior investigators from other fields, funded through the Concept Grant category, continue to conduct research in prostate cancer.
- Four patents have been lodged in the last three years by grantees supported by Movember through PCFA's Research Programs. Investigational products supported by two of these patents have entered clinical trials.
- Grants which were completed by 30 Dec 2011 have secured a total leverage of 127.5% (total leverage \$23,437,066.99 vs total expenditure \$18,382,349.13).

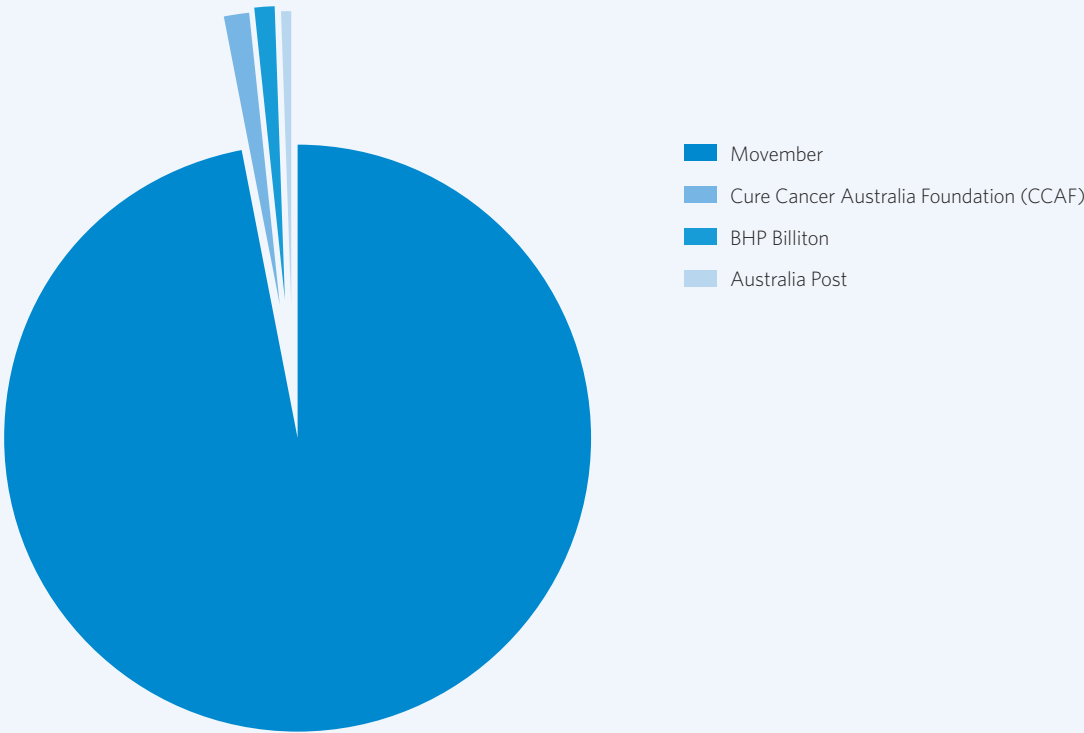
Completed and ongoing research funded either through the National Research Program or the PdCCRS continues to deliver outcomes.

This evaluation report provides detailed information on the outcomes of research investment through our research program.



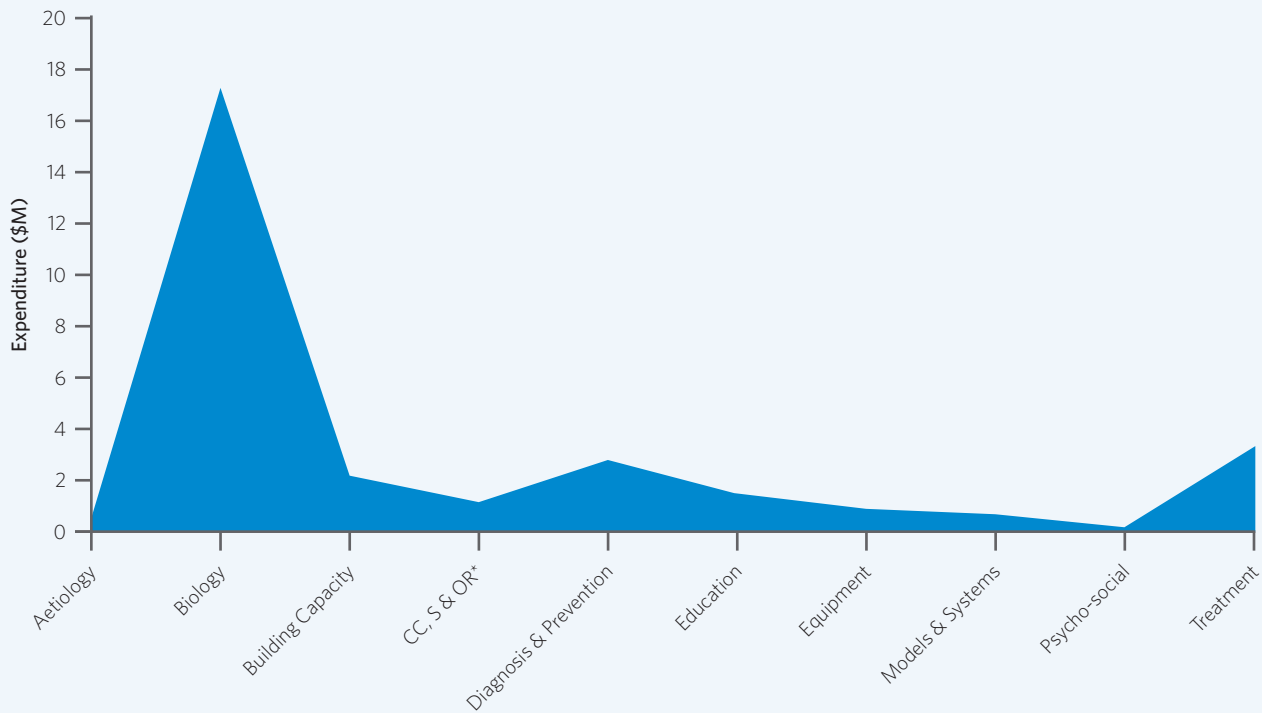
**Dr Miranda Xhilaga**  
Director, Research Programs

# OVERVIEW OF RESEARCH EXPENDITURE 2007-2011

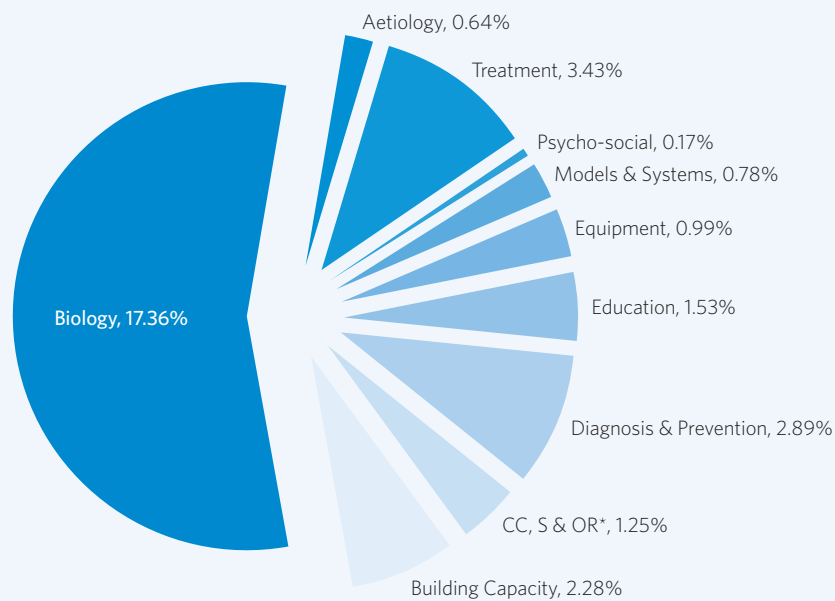


**Figure 3.** Total PCFA Research Program Investment from 2007-2011 is \$29,957,385, accounting for a total Movember Investment of \$29,120,885. A total of \$836,500 was contributed by our other partners: Cure Cancer Australia Foundation (CCAF) - \$380,000; BHP Billiton - \$330,000; Australia Post - \$126,500. In 31 December 2012, 100 out of 136 awarded were complete (*Appendix 2*). Cancer Australia contribution is mentioned elsewhere. A comprehensive list of these research grants is provided in *Appendix 1*.

# FUNDING BY COMMON SCIENTIFIC OUTLINE



**Figure 4.** As classified by Common Scientific Outline (CSO), most of the competitive funding awarded from 2007-2011 was in the area of biology followed by treatment and diagnosis. The number of grants funded in the area of biology was also highest compared to equipment, treatment and diagnosis and prevention. \*Cancer Control, Survivorship & Outcomes Research

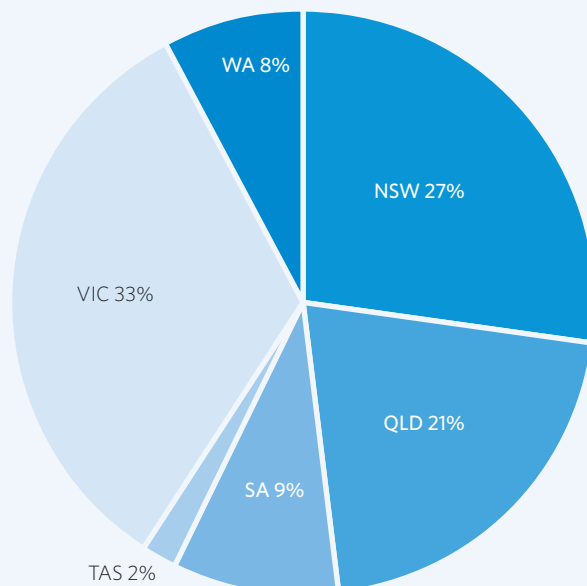
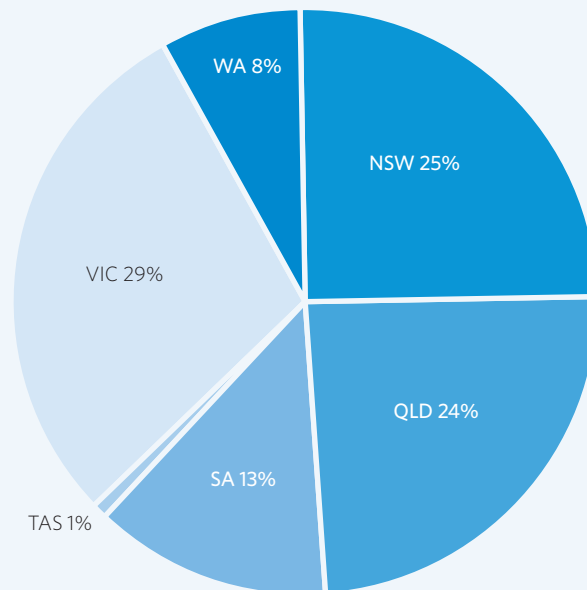


**Figure 5.** The Program funded mostly basic science projects followed by grants focusing on treatment of prostate cancer, diagnosis and prevention and building capacity grants.

# FUNDING DISTRIBUTION BY STATE AND ADMINISTRATION INSTITUTION (2007-2011)

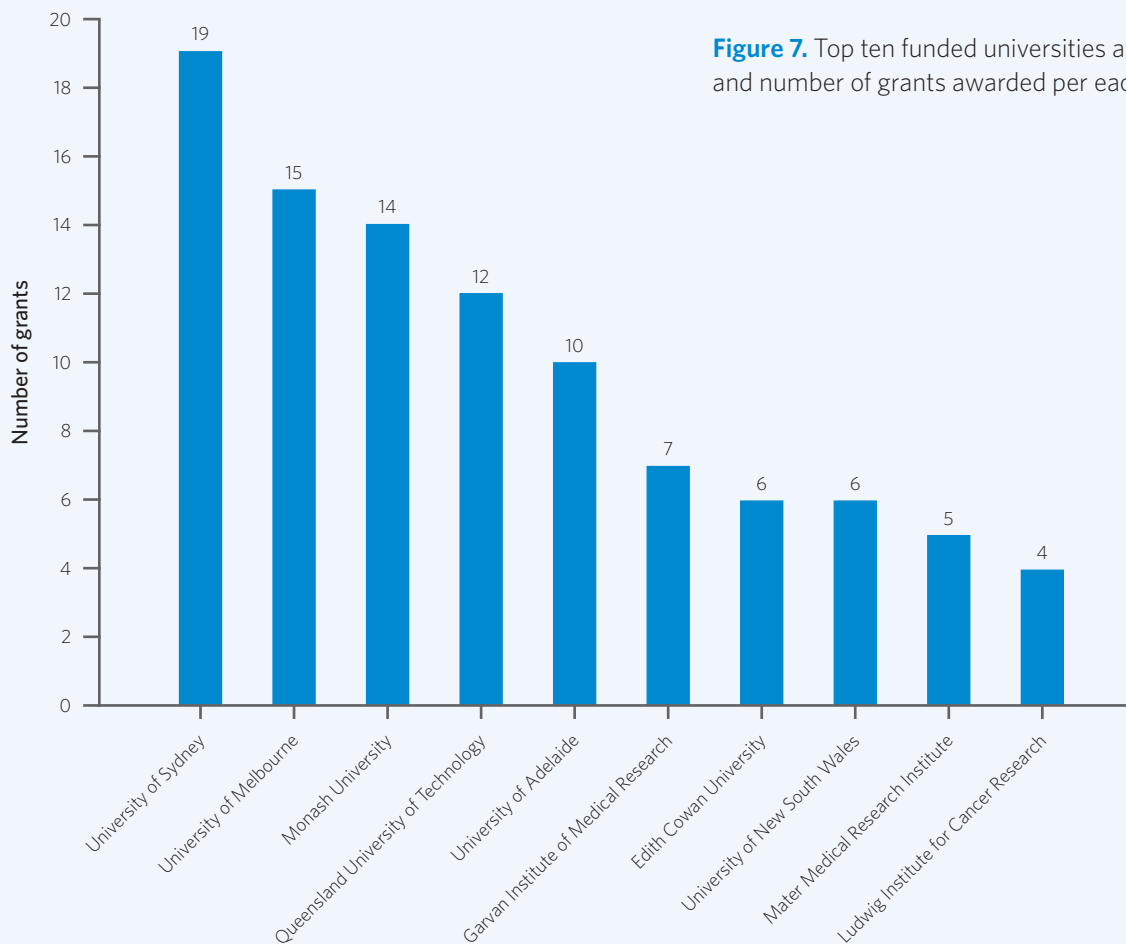
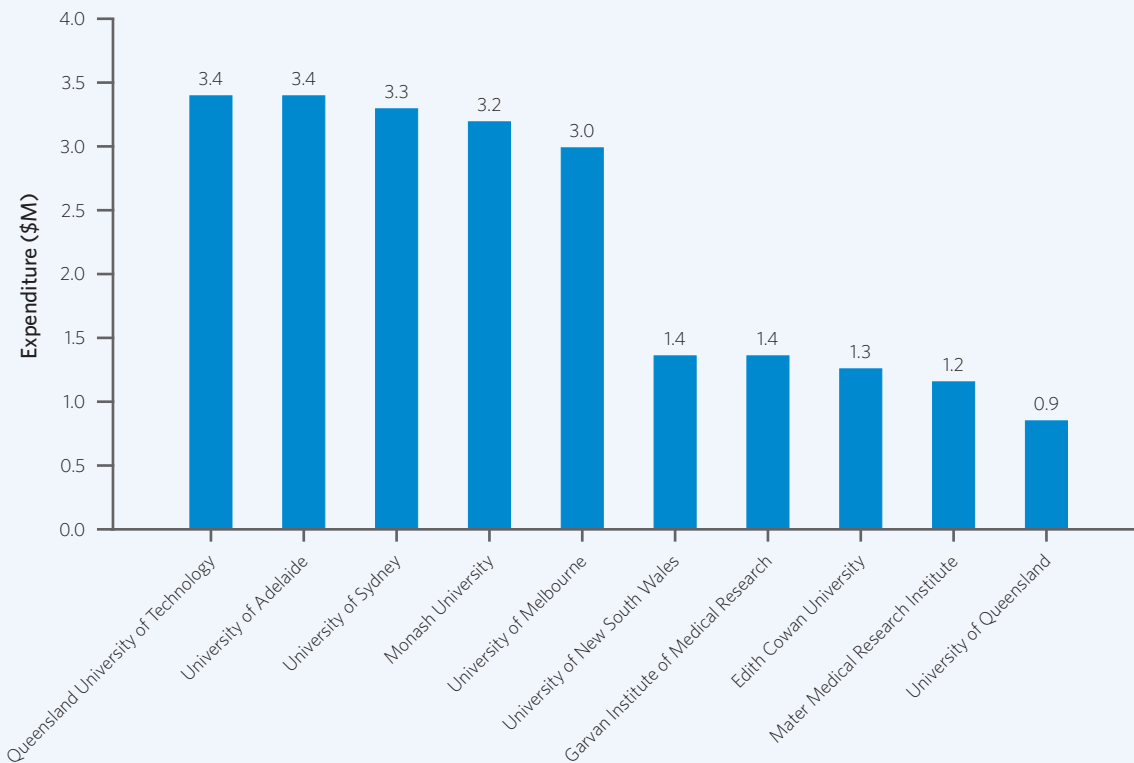
Total funding allocation and expenditure per state was as follows:

NSW	QLD	SA	VIC	TAS	WA
\$7,630,624	\$7,231,977	\$3,844,353	\$8,791,440	\$202,380	\$2,256,610



**Figure 6.** Percentage of funding (A) and numbers of grants (B) awarded per state. Nearly \$8M was awarded to competitive grants in the states of New South Wales and Queensland and nearly \$9M to the state of Victoria and \$3.8M to competitive, investigator driven and enabling grants to South Australia. Western Australia and Tasmania were awarded \$2M and \$200K respectively, a reflection of lower prostate cancer research activities in these states.

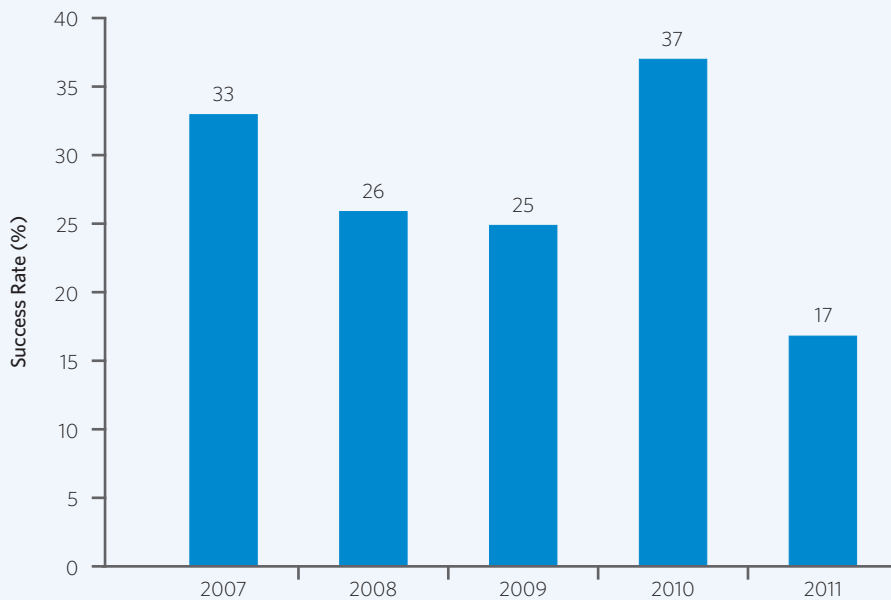
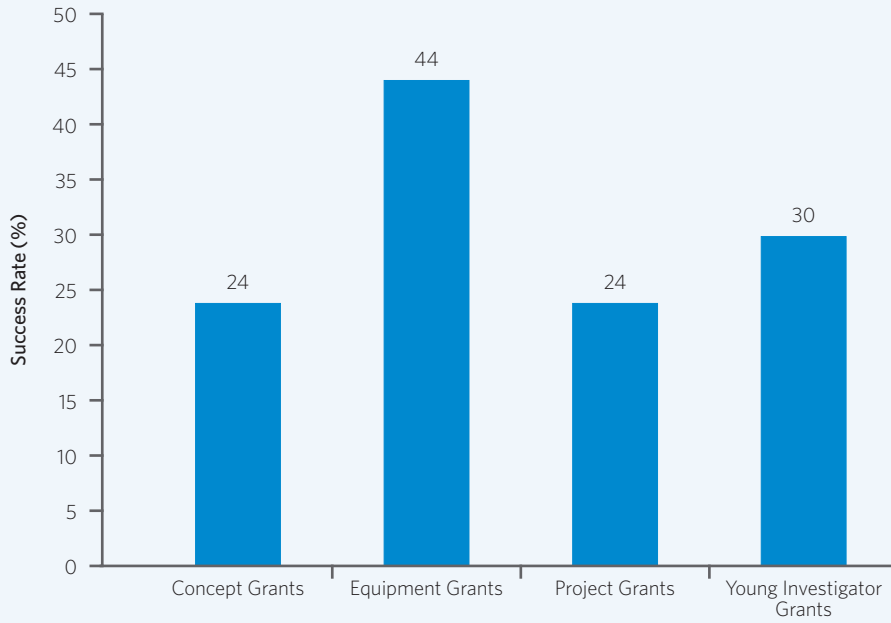
# TOP TEN FUNDED UNIVERSITIES AND INSTITUTIONS



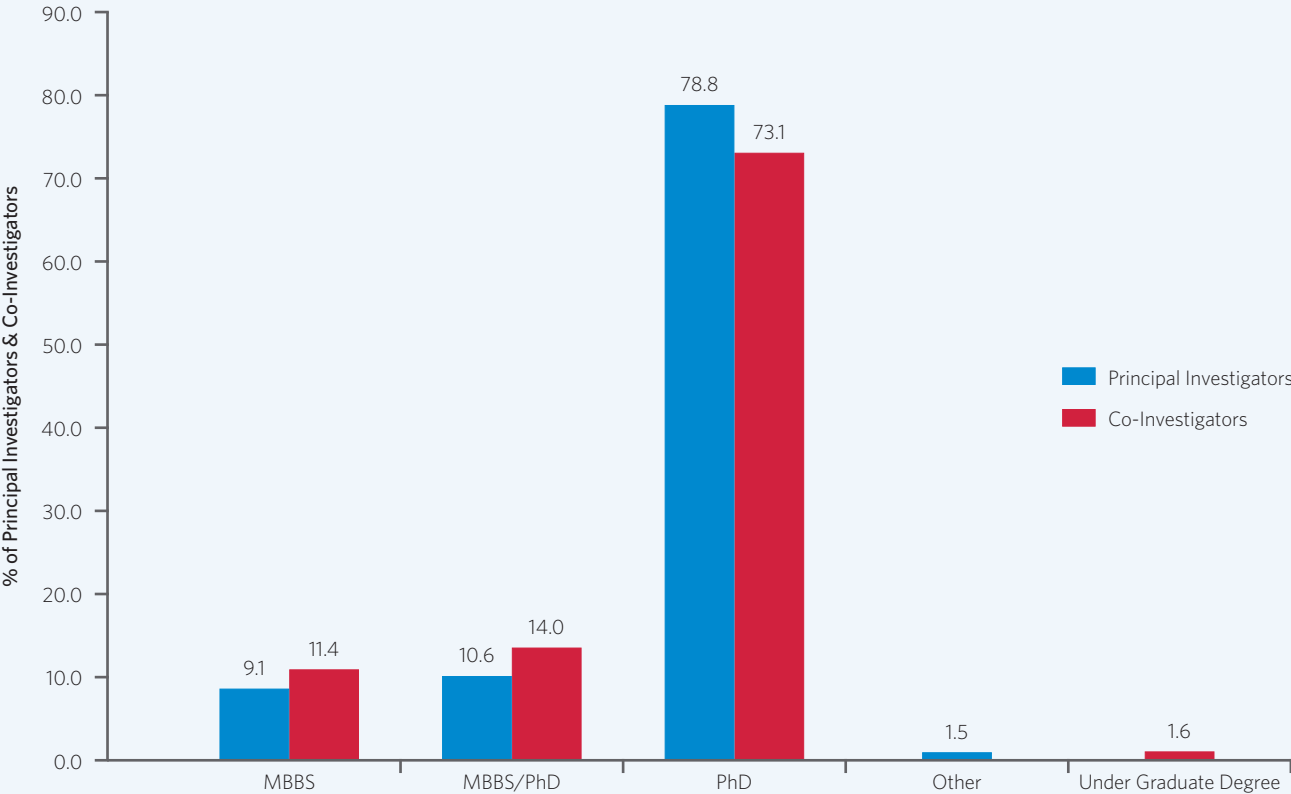
**Figure 7.** Top ten funded universities and/or institutions (A) and number of grants awarded per each of them (B)



# OVERALL SUCCESS RATE



**Figure 8.** From 2007-2011 PCFA's Research Program has funded nearly half of the number of equipment grants submitted providing important infrastructure and leveraging via co-funding with the universities or institutions and other sources (A). The best success rate was overall achieved in 2010 funding round with 37% of the total of grants submitted being successful (B).



**Figure 9.** PCFA’s Research Program has funded predominantly applications submitted from career academics (up to 79% of principal investigators and 73% of the listed co-investigators hold a PhD in basic sciences), based in research departments at universities or specialised research institutes.

# RESEARCH PROGRAM KEY PERFORMANCE INDICATORS (KPIs)

## Process-related KPIs and goals evolve around the application seeking and evaluation process and aim to:

### **KPI 1. Measure the rigor of the application seeking, receipt and evaluation process**

- **Goal 1.** Enable widespread distribution of the announcement of the opening of new funding rounds.
- **Goal 2.** Ensure consistency of the timing of the opening of the funding round, deadline for submissions and announcements of results.
- **Goal 3.** Ensure that eligibility for specific applications and overall research priorities is available in writing when the application round opens.
- **Goal 4.** Ensure that each application is independently reviewed by two or more (the goal) external expert reviewers providing trenchant reviews for each grant; and that two members of the RAC serve as spokespersons.
- **Goal 5.** Ensure that RAC attracts members with broad diversity of expertise, including a member representing individuals affected by prostate cancer.
- **Goal 6.** Ensure that grant review process includes guidelines for proper handling of any conflicts of interest by RAC members. Any Co-I related to received applications to be declared and appropriate action taken.
- **Goal 7.** Ensure the Research Program funds only category I grants.

## Outcome related KPIs aim to measure what the research investment has achieved.

### **KPI 1. Measure productivity, quality and impact of funded research (goal and status for each program is indicated in the next section)**

- **Goal 1.** Achieve a specific number of peer-reviewed publications (depending on grant category) upon the completion of each grant, in medium to high impact journals in the field.
- **Goal 2.** Secure overall leveraged funding (specific for each category) via application to other funding sources such as NHMRC, ARC, CA Australia, Cure Cancer Australia Foundation or/and other national and international competitive grant schemes.
- **Goal 3.** Evidence of translation for research into early detection, treatment and survivorship focused research (i.e. patents and findings that influence policy change).
- **Goal 4.** Relates only to YI grantees - > 50% the funded YIs mature into independent scientists leading their own laboratories upon completion of the grant.
- **Goal 5.** Relates only to CG holders - > 50% of concept grantees demonstrate ongoing involvement in prostate cancer research as evidenced by prostate cancer publication and/or receipt of additional funding to continue work on prostate cancer research.

### **KPI 2. Measure collaboration and partnerships in prostate cancer research**

- **Goal 1.** Measure number of successful multi-investigator grants in 2011 vs. 2007.
- **Goal 2.** Measure number of grants with investigators from >1 state, 2011 vs. 2007.

### **KPI 3. Measure transparency**

- **Goal 1.** Clear and public disclosure of all information regarding processes and governance of the Research Program.
- **Goal 2.** Evidence of evaluation of research investment.

# PROGRAM ACHIEVEMENTS AGAINST THE SET KPIs

## YOUNG INVESTIGATOR CATEGORY

### KPI 1. Measure productivity, quality and impact of funded research

- **Goal 1.** Achieve an overall average of up to two 2 peer-reviewed publications upon the completion of each grant, in medium to high impact journals in the field. Status-average 3.8 publications/grantee.
- **Goal 2.** Secure overall leveraged funding that equals at least 50% of investment via application to other funding sources such as NHMRC, ARC, CA, Cure Cancer Australia Foundation or/and other national and international competitive grant schemes (Status - 302.15%). Progress reports indicate that from 2007-2011, YIs were able to leverage additional funding at a rate of \$3.02 for every \$1 received through PCFA's Research Program.
- **Goal 3.** Evidence of translation for research into early detection, treatment and survivorship focused research (i.e. patents and findings that influence policy change):

**Examples:** Sports Medicine position statement - a *guideline for all exercise assessment and prescription for cancer*

*management in North America and much of the world* (Prof Daniel Galvão, Young Investigator Grant awarded 2008).

*Position Statement for Exercise and Cancer-* Exercise and Sports Science Australia (ESSA), a document (guide) for clinicians and practitioners (Prof Daniel Galvão, Young Investigator Grant awarded 2008).

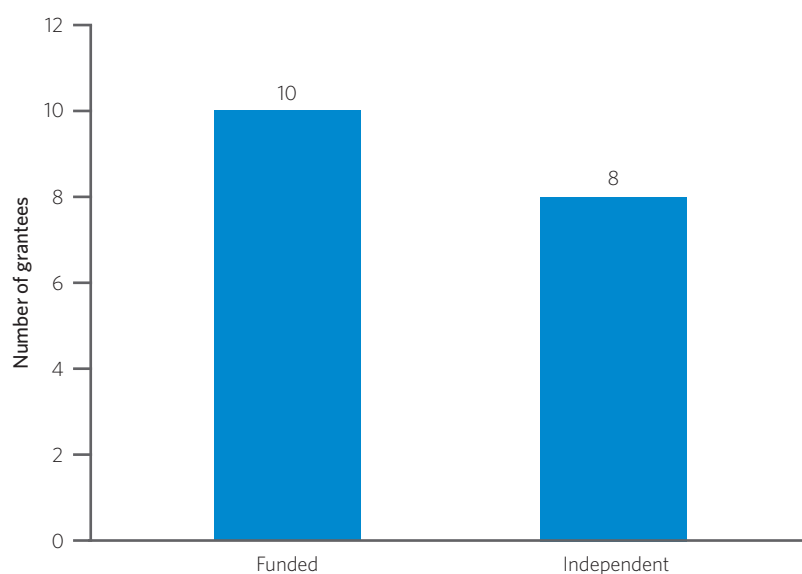
Patient sheet guidelines for consumers and clinicians - ESSA and Exercise Is Medicine Australia.

*Guidelines for implementing exercise programs for cancer patients* - for the Cancer Council Western Australia.

An accessible *support program* for people touched by prostate cancer with the online *clinical support & research portal* - [www.prostateonline.org.au](http://www.prostateonline.org.au). (Dr Addie Wootten, YI1310, grant co-funded with *beyondblue*).

- **Goal 4.** More than 50% of the funded YIs mature into independent scientists leading their own laboratories upon completion of the grant. At present the figure is 80%.

Number of Grants	Investment	Leverage	% Leverage	Number of Publications	Mean Number of Publications per Grant	Patents
14	\$3,290,239	\$9,941,303	302.15%	53	3.8	1



**Figure 10.** From 2007-2011, eight out of 10 young investigators have matured into becoming independent scientists. 100% of the YIs funded in 2007 have been heading their own laboratories for more than two years.

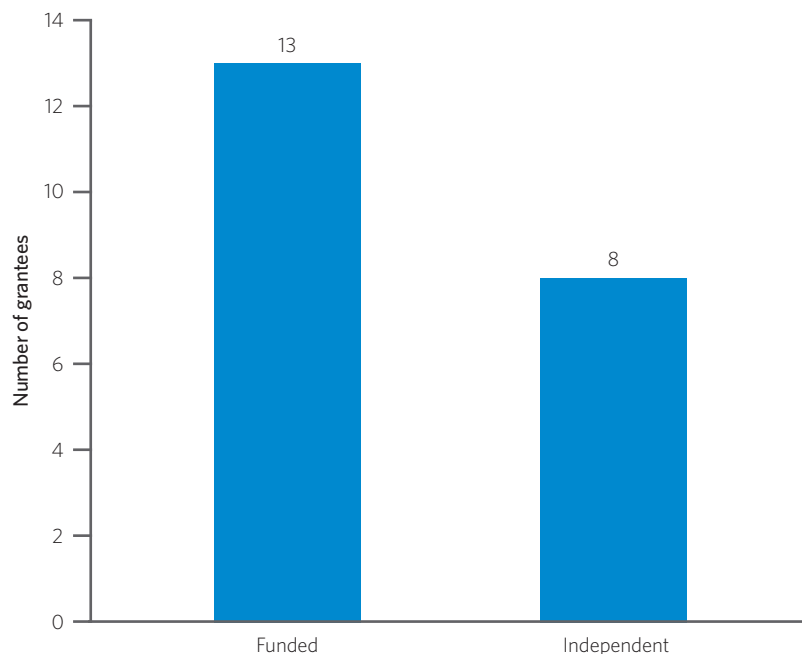
# PROGRAM ACHIEVEMENTS AGAINST THE SET KPIs

## CONCEPT GRANT CATEGORY

### KPI 1. Measure productivity, quality and impact of funded research

- Goal 1.** Publish at least one peer-reviewed publication upon the completion of each grant. Status: average of 0.9 publications/grantee.
- Goal 2.** Secure leveraged funding directly linked with the PCFA funded grant via application to other funding sources such as NHMRC, ARC, CA, Cure Cancer Australia Foundation or/and other national and international competitive grant schemes to allow for continuation of research in prostate cancer. (Status – 56.41% leverage). From 2007-2011, concept grantees secured additional funding at a rate of \$0.56 for every \$1 received awarded through PCFA's Research Program.
- Goal 3.** Evidence of translation for research into early detection, treatment and survivorship focused research (i.e. patents and findings that influence policy change):  
 Novel Anti-Tumour Drugs for the treatment of prostate cancer- a study that was a direct application of previous cancer biology research in other tumours (Targeting the Drug-Induced expression of the Tumour Metastasis Suppressor, Drg-1); Patent #201090553 (Professor Des Richardson, Concept Grant recipient, 2007).
- Goal 5.** More than 50% of the funded CG recipients continue to conduct prostate cancer research post completion of funding. Status: 62%.

Number of Grants	Investment	Leverage	% Leverage	Number of Publications	Mean Number of Publications per Grant	Patents
15	\$3,443,038	\$1,942,062	56.41%	13	0.9	1



**Figure 11.** Concept Grant Recipients retained as PCa researchers from completed grants 2007-2011.



## PROJECT GRANT CATEGORY

### KPI 1. Measure productivity, quality and impact of funded research

- **Goal 1.** Publish at least one peer-reviewed publication upon the completion of each grant. (Status: average 1.0 publications/grantee).
- **Goal 2.** Secure 100% leveraged via application to other funding sources such as NHMRC, ARC, CA, Cure Cancer Australia Foundation or/and other national and international competitive grant schemes to allow for continuation of research in prostate cancer. Status: 73.41% leverage.
- **Goal 3.** Wherever applicable, evidence of translation for research into early detection, treatment and survivorship focused research (i.e. patents and findings that influence policy change) Status: two registered patents:
  1. Australian PCT filing: Novel Protease Inhibitors: a complementary approach to androgen blockade without the side effects. International Patent application number: PCT/AU2009/001031 (2010) Swedberg J.E and Harris J.M. (Prof Jonathan Harris, PR0907).
  2. Australian Provisional patent application # 2008903230, July 2009, renewed. Dr Radford and her team aim to develop a vaccine that directly stimulates immune cells to kill tumour cells in prostate cancer patients. (Dr Kristen Radford, PG1307).

Number of Grants	Investment	Leverage	% Leverage	Number of Publications	Mean Number of Publications per Grant	Patents
48	\$9,235,965	\$6,779,978	73.41%	49	1.0	2

## EQUIPMENT GRANT CATEGORY

### KPI 1. Measure productivity, quality and impact of funded research

- **Goal 1.** Publish at least one peer-reviewed publication per year, per piece of equipment funded (follow up 18 months post award) Status – average 2.9 publications/pieces of equipment purchased. The number of high publications in this category reflects the high number of equipment users.
- **Goal 2.** Secure 100% leveraged funding via application to other funding sources upon release of awarded funds by PCFA Status: 337.52% leverage.

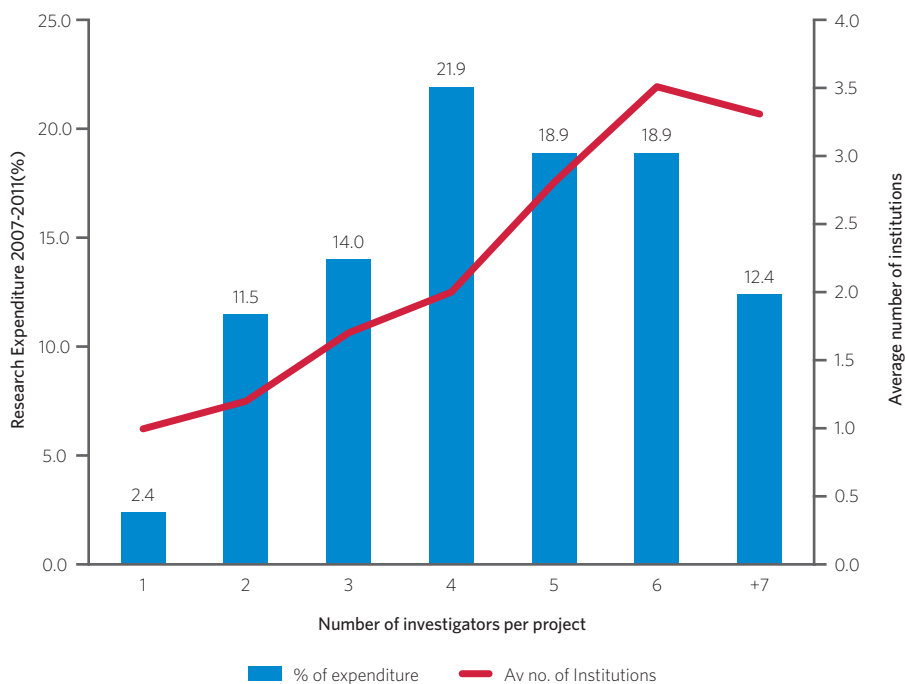
Number of Grants	Investment	Leverage	% Leverage	Number of Publications	Mean Number of Publications per Grant
18	\$990,457	\$3,342,954	337.52%	51	2.8

# PROGRAM ACHIEVEMENTS AGAINST THE SET KPIs

## ALL PCFA RESEARCH PROGRAM CATEGORIES

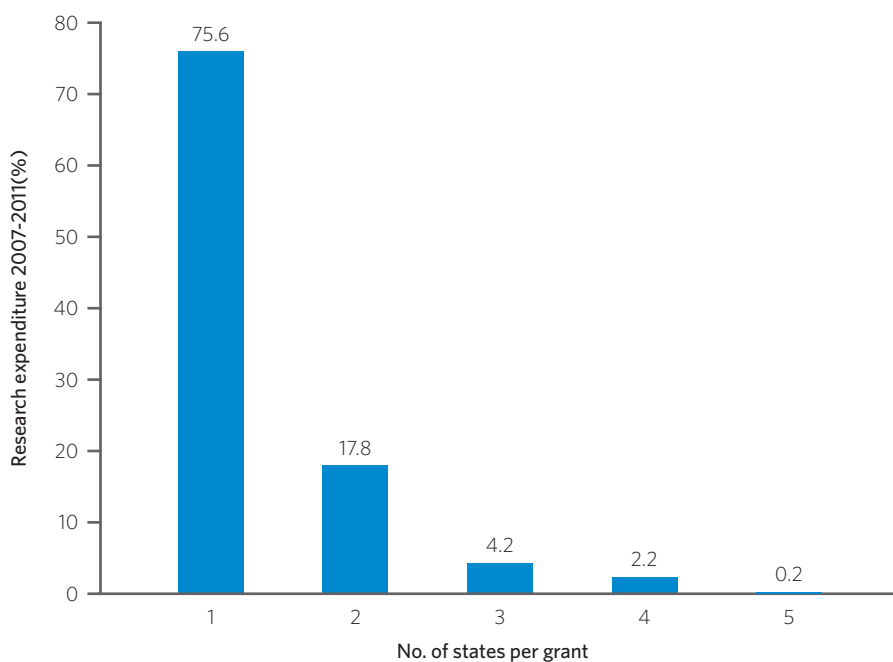
### KPI 2. Measure collaboration and partnerships in prostate cancer research.

- **Goal 1.** Measure number of successful multi-investigator grants in 2007-2011.



**Figure 12.** Funding allocated to grants with multiple investigators and administering institutions. 86.11% of the total expenditure involved collaboration of two or more investigators. More than 72% of this funding was allocated to research that involved collaboration between 4-7 investigators.

- **Goal 2.** Measure number of grants with investigators from >1 state, 2007-2011.



**Figure 13.** Funding allocated to grants carried out over multiple states. Of all 75.6% of grants awarded from 2007-2011, involved a team of researchers based in a single state. Only 24.4% involved a multi-national collaborative team.

*“Prostate Cancer Foundation of Australia and Cancer Australia have co-founded research into prostate cancer through Cancer Australia’s Priority driven Collaborative Cancer Research Scheme since 2007. It has been a remarkable partnership which has allowed for a dramatic increase of translation of prostate cancer research findings into the clinic. We look forward to a long and productive association.” Prof John Mills*

# PROGRAM ACHIEVEMENTS AGAINST THE SET KPIs

## PRIORITY DRIVEN CANCER RESEARCH SCHEME (PdCCRS) – PROJECT GRANTS

### KPI 1. Measure productivity, quality and impact of funded research

- **Goal 1.** Average of up to two peer-reviewed publications upon the completion of each grant, in medium to high impact journals in the field.
- **Goal 2.** Secure 100% leveraged via co-funding with CA\* and other PdCCRS partners. Status: 100%.
- **Goal 3.** Evidence of translation for research into early detection, treatment and survivorship focused research (i.e. patents and findings that influence policy change).

\*From 2007-2011, a total of 12 grants (five of which were completed on December 2012) of a total value \$6.59M have been funded. During this period, an additional 12 grants at a total of \$5.1M fitting PCFA's research priorities were funded through the PdCCRS by Cancer Australia and other PdCCRS partners such as Radiation Oncology. Overall, investment of \$3.21M has leveraged a further \$8.48M, an estimated 264% return on investment. In addition, an estimated further \$2.3M in infrastructure funds was received by grant-holding institutions through Australian Competitive Grants Register (ACGR).

M. Lackmann (CA 491195) Provisional Patent Application: Detection of EphA3 as a Marker of the Presence of Solid Tumors. Lackmann, M., Scott, A.M., To, C., Bebbinton, C.R., Yarranton, G.T., Baer, M., Palath, V., Assignee: KaloBios Pharmaceuticals, Inc., 260 E. Grand Ave, South San Francisco, CA 94080, filed: 18th June 2010, Townsend & Townsend Attorney Docket No.: 021167-004000US.

M. Lackmann (CA 491195) A PCT claiming the use of IIIA4 as anti-vascular agent targeting EphA3+ and EphA3- tumours has been filed (WO2008112192-A2; WO2008112192-A3; US2008286272-A1, KaloBios Pharmaceuticals, Inc.).

### KPI 2. Measure collaboration and partnerships in prostate cancer research

- 100% of PdCCRS funded grants are submitted by multidisciplinary, national and/or international teams.

Number of Grants	Investment	Leverage	% Leverage	Number of Publications	Mean Number of Publications per Grant	Patents
5*	\$1,422,648	\$1,430,768	100.57%	8	2	2

\*1 grant has been terminated

## ALL CATEGORIES

### KPI 3. Measure transparency

- **Goal 1.** Clear and public disclosure of ALL information regarding processes and governance of the Research Program. Status: 100%. For example:
  - Mission, goals, priorities and categories of funding of the RP are published on the public domain.
  - Successful grantees, titles and summaries of funded research, details of their academic institutions and respective states are disclosed on the public domain.
  - Review process and process of handling conflict of interest is disclosed on the public domain and documentation available to the potential applicants.
- Financial record keeping and stakeholder knowledge of Research Program's overall expenditure are published in annual reports, which are available on PCFA's website.
- Transparency as a KPI has been further enabled via open forums where invited stakeholders were asked about their assessment of the quality and availability of the program.
- **Goal 2.** Evidence of evaluation of research – an internal evaluation of the research investment was conducted at three years post establishment of the program (December 2010-January 2011).

# SUMMARY OF KPI STATUS

## PROCESS-RELATED KPIs

## GOAL STATUS

### KPI1. Measure the rigor of the application seeking and evaluation process

<b>Goal 1.</b>	Enable widespread distribution of the announcement of the opening of new funding rounds.	●
<b>Goal 2.</b>	Ensure consistency of the timing of the opening of the funding round, deadline for submissions and announcements of results.	●
<b>Goal 3.</b>	Ensure that eligibility for specific applications and overall research priorities available in writing when the application round opens.	●
<b>Goal 4.</b>	Ensure that each application is independently reviewed by one (preferably two) external expert reviewer providing trenchant reviews for each grant and two members of the RAC.	●
<b>Goal 5*.</b>	Ensure that RAC attracts members with broad diversity of expertise, including a member representing individuals affected by prostate cancer.	●
<b>Goal 6.</b>	Ensure that grant review process includes guidelines for proper handling of any conflicts of interest by RAC members. Any COI related to received applications to be declared and appropriate action taken.	●
<b>Goal 7**.</b>	Ensure the Research Program funds only category I grants.	●

\*A list of past and current RAC members and their expertise is provided in Appendix .

\*\*PCFA's Research Program has been successfully listed in the Commonwealth Government's Competitive Grants Register since 2009. This listing allows infrastructure support for institutions holding PCFA or PdCCRS grants.

## OUTCOME-RELATED KPIs

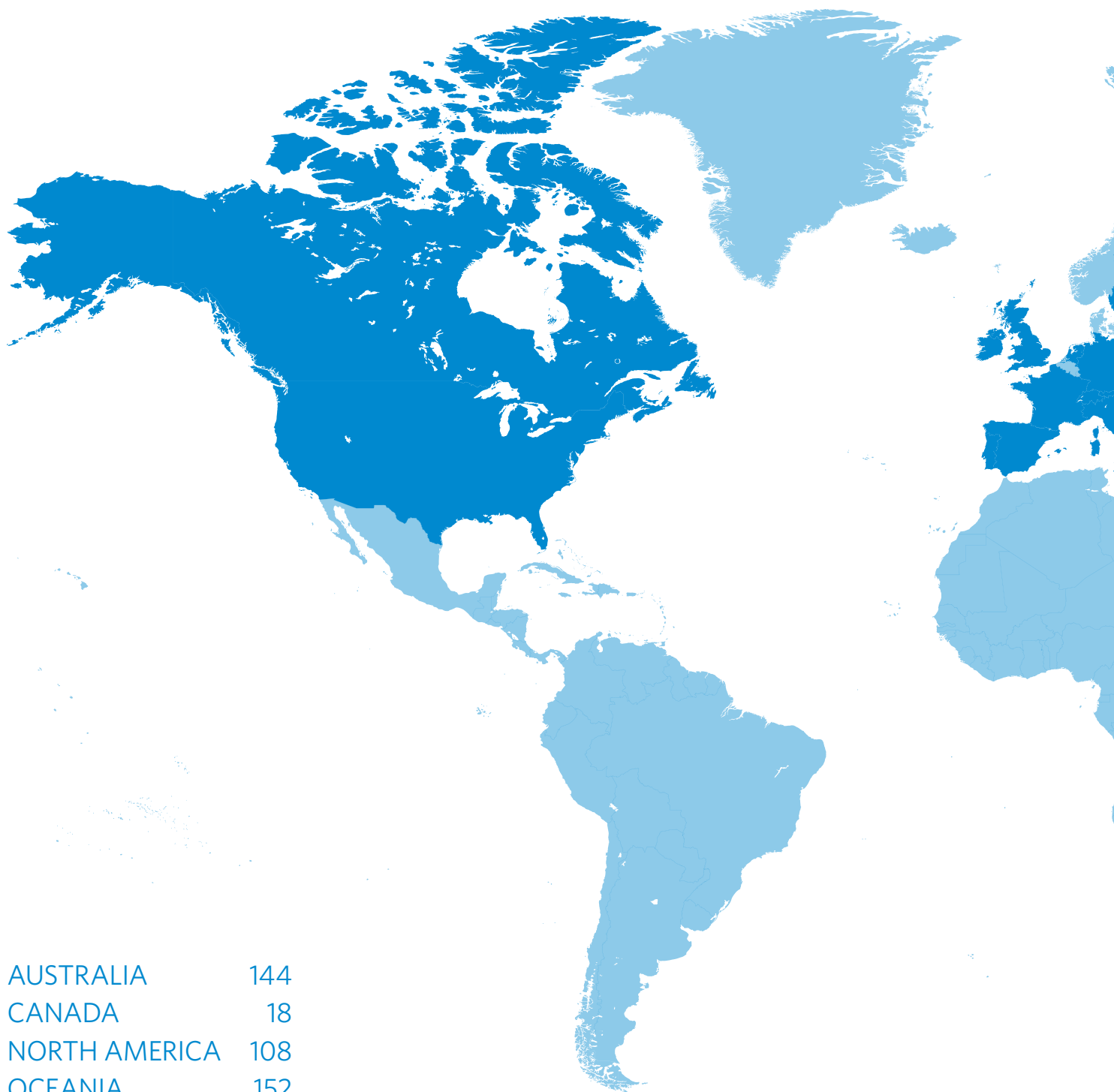
### KPI 1. Measure productivity, quality and impact of funded research (goal and status for each program is indicated in the next section)

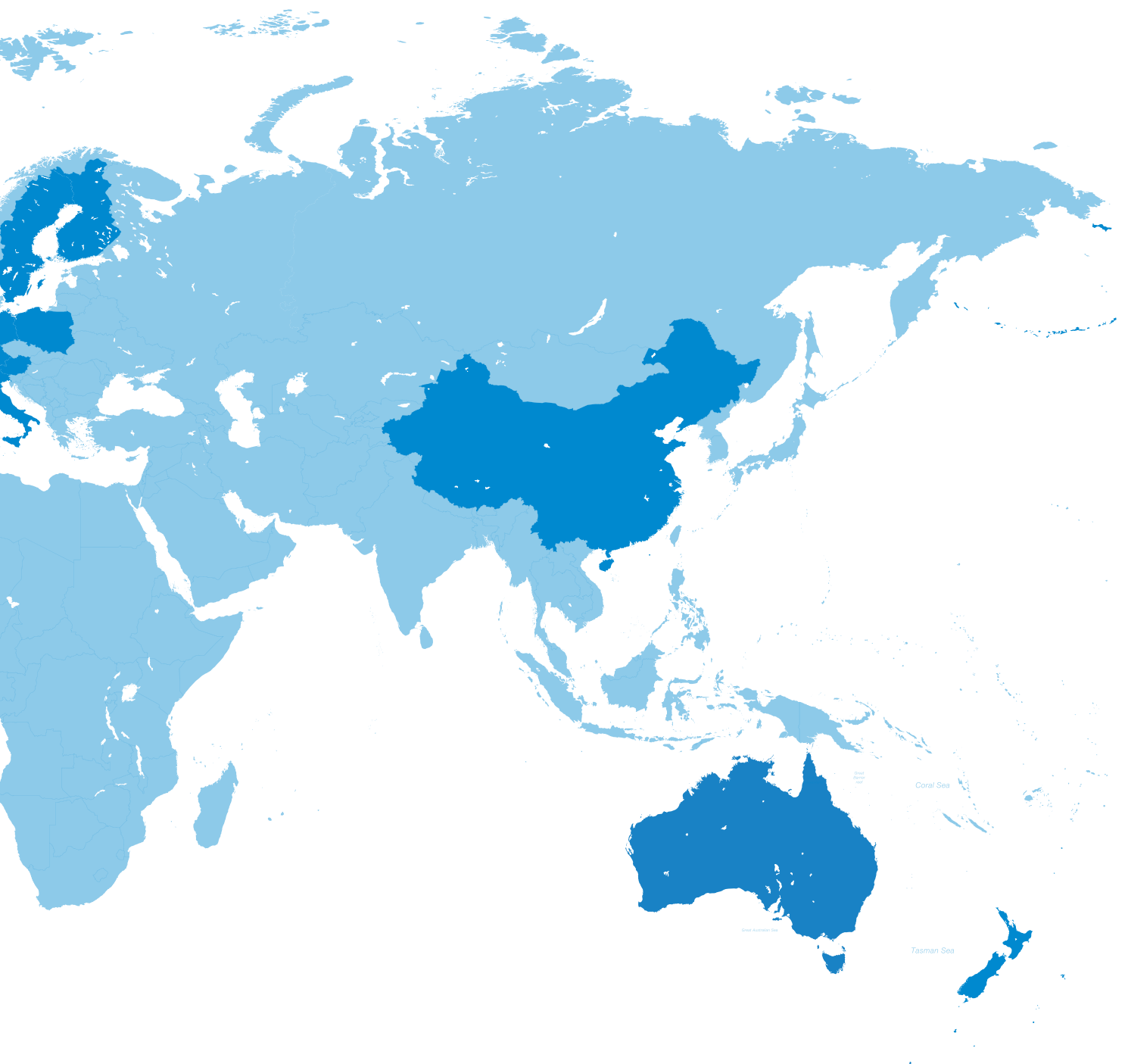
<b>Goal 1.</b>	Achieve a specific number of peer-reviewed publications (depending on grant category) upon the completion of each grant, in medium to high impact journals in the field. Refer to Summary Table of Publications for each grant category.	●
<b>Goal 2.</b>	Secure overall leveraged funding (specific for each category) via application to other funding sources such as NHMRC, ARC, CA Australia, Cure Cancer Australia Foundation or/and other national and international competitive grant schemes.	●
<b>Goal 3.</b>	Evidence of translation for research into early detection, treatment and survivorship focused research (i.e. patents and findings that influence policy change).	●
<b>Goal 4.</b>	Relates only to YI grantees – More than 50% of the funded YIs mature into independent scientists leading their own laboratories upon completion of the grant.	●
<b>Goal 5.</b>	Relates only to CG holders – More than 50% of concept grantees demonstrate ongoing involvement in prostate cancer research as evidenced by prostate cancer publication and/or receipt of additional funding to continue working on prostate cancer research .	●

● Achieved ● Ongoing



# GLOBAL LOCATION OF PCFA'S EXTERNAL ASSESSORS





# CASE STUDY I

## YOUNG INVESTIGATOR CATEGORY

### PROFESSOR DANIEL GALVÃO 2008-2012

**Project title: Population based exercise intervention for prostate cancer patients - RADAR**

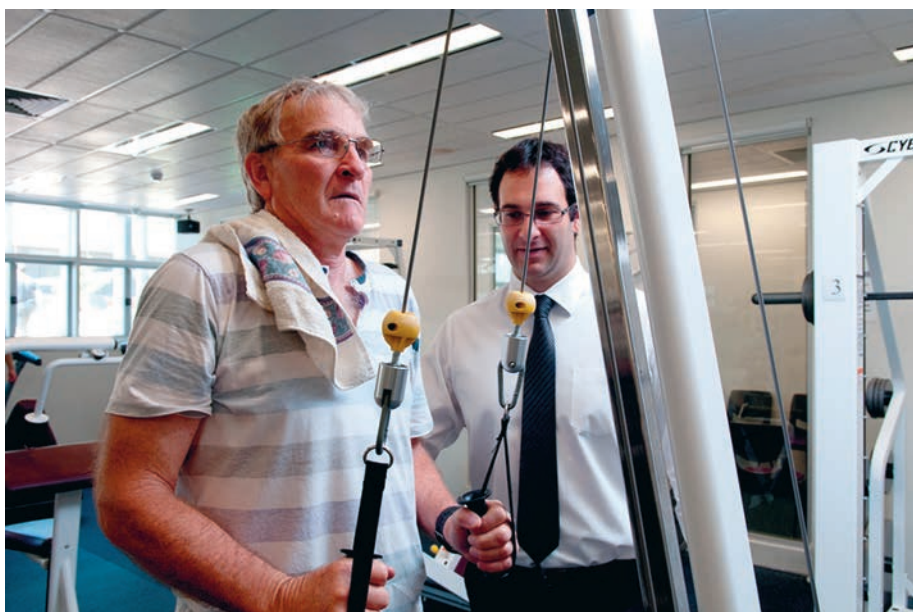
#### Research focus

Prof Daniel Galvão was awarded a Movember Young Investigators Grant in 2008. Daniel's research examines the role of physical activity for cancer survivors across the cancer continuum with a focus on prostate cancer and the adverse effects from androgen suppression therapy.

His early published work highlighted the important physiological and psychological benefits that could be derived from exercise when undertaken during or after traditional cancer treatment. Subsequently, Daniel demonstrated the clinical benefits of resistance training for improving physical and muscle function in prostate cancer patients undergoing long-term androgen deprivation. His team has also discovered a rapid loss of bone and lean mass and increased total body fat following androgen deprivation for prostate cancer. Further research (Galvão et al. *Prostate Cancer Prostatic Dis* 2008) demonstrated exercise to be safe for these patients without compromising the therapy purpose of testosterone suppression.

As a countermeasure strategy Daniel established the efficacy of exercise as medicine to reverse muscle loss and improve physical function and quality of life including general health and reduced fatigue in prostate cancer patients on long-term androgen deprivation (Galvão et al. *J Clin Oncol* 2010, cited 439 times). Importantly, exercise has been identified as the front-runner strategy for overcoming cardiovascular and metabolic risks associated with androgen suppression therapy (Galvão et al. *Nat Clin Pract Urol* 2008; Galvão et al. *Prostate Cancer Prostatic Dis* 2009).

More recently Daniel and his team have also demonstrated that apart from differences in body fat and triglycerides, the beneficial effects of resistance and aerobic exercise program are similar in patients on acute and chronic androgen deprivation suggesting that exercise training should be initiated when androgen deprivation commences (Galvão et al. *Journal of Urology*. 2011).



Professor Daniel Galvão, Director of Health and Wellness Institute, pictured at work with prostate cancer survivor Dennis Doust.

#### Thought leadership

Prof Galvão was appointed Director of the University's Health and Wellness Institute in 2010 where he had both, research and operational responsibility. Daniel has a defined leadership role within the Institute's research group and activities, providing a link between clinical and basic science research that emphasises advanced biomedical clinical translational applications. From 2009-2013 he has shown sustained leadership to a team of 22 staff (consisting of: one senior postdoctoral research fellow; three postdoctoral research fellows; four research assistants; eight allied health clinicians; two senior managers and four administrative staff). Furthermore, he has shown sustained innovation in a range of research projects by attracting 22 new funded external grants.

Daniel's research output has been consistently high, as evidenced by publications as leading author in high quality peer-reviewed journals (e.g. *Journal of Clinical Oncology* 2005 & 2010, Impact Factor: 18.970; top 1% of all science Journals) and success in attracting eight Category 1 nationally competitive project/equipment grant funding continually since 2007 (2 as first Named Investigator) and a track record of successful national and international research collaborations.

Overall, Daniel's contribution has facilitated the use of exercise as an important strategy to mitigate treatment side effects and improve quality of life in prostate cancer survivors. His publication record to date includes 86 research outputs comprising 29 refereed journal articles (20 as first or senior author publications), 50 refereed

conference proceedings, one scholarly book, one scholarly book chapter and five other publications for a total citation count of 984 and a H-Index of 15, including two leading author publications in the prestigious Journal of Clinical Oncology from the American Society of Clinical Oncology (IF: 18.970).

Nationally, he is recognised as a leader in the field of *Physical Activity and Cancer* and invited to co-author the *first National Position Statement* by Exercise and Sports Science Australia on Exercise and Cancer entitled *Optimising Cancer Outcomes Through Exercise* (*J Sci Med Sport*. 2009) and is constantly invited to speak at national forums.

His international reputation in the field of *Physical Activity and Cancer* has been recognised by being the Australian researcher invited member of the writing committee for the influential American College of Sports Medicine (ACSM) Consensus Statement on Exercise Guidelines for Cancer Survivors (*Med Sci Sports Exerc*. 2010; IF: 4.106;), which is currently the guideline for all exercise assessment, and prescription for cancer management in North America and much of the World.

### Research Training

Daniel is an exceptional mentor to junior staff and students. He has been mentoring a team of ECU junior academics including one senior postdoctoral research fellow (Academic Level C, Dr Prue Cormie); three postdoctoral research fellows (Academic Level B, Dr Michael Baker, Dr Carolyn McIntyre, and Dr Anthony Gunnell).

Prof Galvão has also provided the opportunity for junior researchers to receive significant training/mentorship in nationally competitive grants being part of *category 1 competitive applications* and successfully attracting funding as associate investigators and/or chief investigators as part of a large research team.

During the time of his Young Investigator award, Daniel has supervised two PhD students and one Masters student to completion (2008, 2012) and is currently supervising four PhD students and one Masters by research student.

### Collaborations

Daniel collaborates and engages extensively with a range of experts and professional partners across a wide range of disciplines including leading medical oncologists, nuclear physicians, urologists, clinical psychologists and exercise physiologists which has resulted in the generation of high quality research outputs. Daniel has teamed up exercise scientists (Prof Taaffe, UQ/Newcastle & Newton, ECU) and medical oncologists (Prof Spry & Joseph, WA) to form a leading ongoing research group in exercise oncology in Australia. The outcome has been 21 and 22 papers co-authored with Prof Newton WA and Prof Taaffe QLD/NSW, respectively, and 17 papers with Medical Oncologists Prof Spry and Prof Joseph and many national competitive research grants. The clinical network has been expanded to NSW with Clinical Prof Denham, Newcastle Mater Hospital Radiation Oncology, and NZ with Clinical Prof Lamb, Radiation Oncology from Wellington Hospital, in the running of an interstate/international prostate cancer exercise trial funded by Prostate Cancer Foundation of Australia. Clinical sites have been expanded (QLD) with leading Urologist Clinical Prof Gardiner and clinical psychologist Prof Chambers in a currently funded trial examining exercise modalities in prostate cancer.

His team has been funded by the Federal Government Collaborative Research Network (CRN) Scheme (~\$1 Million; 2011-2013) in a research program entitled "Exercise is Medicine" to expand its research activities with the University of Queensland (Prof Coombes), University of Sydney (Prof Fiatarone-Singh) and University of Western Australia (Prof Green).

**Internationally**, he continues to collaborate with leading groups in Canada/USA (team of 13 leading international researchers/clinicians) as the Australian researcher contributing to the writing committee for the influential American College of Sports Medicine (ACSM) Consensus Statement on Exercise Guidelines for Cancer Survivors. This international collaboration was initiated at the Siteman Cancer Center at Washington University School of Medicine, USA, and followed by a number of subsequent discussions resulting in the final statement being published in 2010. Key collaborators and international leaders included Professor Courneya, Canada Research Chair in Physical Activity and Cancer, University of Alberta Canada (Dr Peddle-McIntyre from Courneya's team has been since appointed to my team as postdoctoral fellow 2011-2013); Prof Schmitz (*ECU visiting Fellow in July 2012*), University of Pennsylvania School of Medicine, USA; and Prof Segal (*ECU visiting Fellow in April 2012*), Medical Oncologist, University of Ottawa, Canada.

# CASE STUDY I

## YOUNG INVESTIGATOR CATEGORY

### Translation

Daniel has collaborated with the Cancer Council of Western Australia and written a book entitled "Guidelines for Implementing Exercise Programs for Cancer Patients", which is the foundation resource for the Cancer Council "Life Now Exercise Program", a free community exercise program for cancer survivors.

In collaboration with Prof Newton (ECU) and colleagues from QUT he has produced the National Position Statement for Exercise and Sports Science Australia (ESSA). This document is guiding Accredited Exercise Physiologists (AEPs) who specialise in the delivery of exercise to this patient population. The result is more AEPs are trained in this clinical exercise area and cancer survivors nationally are benefiting from this highly translational research.

### Publication

- Galvão DA, Spry NA, Taaffe DR, Newton RU, Stanley J, Shannon T, Rowling C, Prince R. Changes in muscle, fat and bone mass after 36 weeks of maximal androgen blockade for prostate cancer. *British Journal of Urology International*. 2008 Jul;102(1):44-7. Impact Factor: 3.190.
- Galvão DA, Nosaka K, Taaffe DR, Peake J, Spry N, McGuigan MR, Kristjanson LJ, Newton RU. Endocrine and immune responses to resistance training in prostate cancer patients. *Prostate Cancer Prostatic Dis*. 2008;11(2):160-5.
- Hayes SC, Spence RR, Galvão DA, Newton RU. Australian Association for Exercise and Sport Science position stand: Optimising cancer outcomes through exercise. *J Sci Med Sport*. 2009;12(4):428-434.
- Galvão DA, Taaffe DR, Spry N, Joseph D, Newton RU. A combined resistance and aerobic exercise program reverses muscle loss in men undergoing androgen suppression therapy for prostate cancer without bone metastases: a randomized controlled trial. *J Clin Oncol*. 2010: 340-347. IF 18.970.
- Schmitz K, Courneya KS, Matthews C, Demark-Wahnefried W, Galvão DA, Pinto BM, Irwin ML, Wollin K, Segal R, Lucia A, Schneider CM, Vongruenigen V, Schwartz A. American College of Sports Medicine roundtable on exercise guidelines for cancer survivors. *Med Sci Sports Exerc*. 2010;42(7):1409-1426. IF 4.106.
- Galvão DA, Taaffe DR, Spry N, Newton RU. Invited Chapter: Physical Activity and Genitourinary Cancer Survivorship. In: *Physical Activity and Cancer*; Series: Recent Results Cancer Res. 2011;186:217-36. Courneya KS and Friedenreich C. Eds. Springer-Verlag.



Dr Patric Jansson, Bosch Prostate Cancer Focus Group, University of Sydney



### PROFESSOR DES RICHARDSON 2007-2009

#### Development of Novel Anti-Tumour Drugs for the treatment of prostate cancer: Targeting the Drug-Induced expression of the Tumour Metastasis Suppressor, Drg-1.

Recent studies have identified that the metastasis suppressor gene N-myc down-stream regulated gene 1 (NDRG1) inhibits progression of prostate cancer and is correlated with better patient prognosis. However, the molecular mechanisms behind the anti-tumour function of NDRG1 are unknown and require elucidation.

Prof Richardson's team demonstrated that NDRG1 is involved in four crucial signaling pathways in prostate cancer, namely the TGF- $\beta$ , PI3K, PTEN and Ras pathways. We also discovered that NDRG1 modulates important cell adhesion molecules, E-cadherin and  $\beta$ -catenin, inhibiting prostate cancer cell migration and invasion. Importantly, we found that NDRG1 also plays an important role in the autophagic stress response, which is important in the progression of cancer.

Considering that NDRG1 inhibits prostate cancer progression, novel therapies that up-regulate NDRG1 may be effective against this disease. In fact, a novel class of anti-

cancer agents, namely thiosemicarbazone iron chelators Dp44mT and DpC, were found to up-regulate NDRG1 in prostate cancer cells. *These exciting findings have the potential to advance the field of prostate cancer research and will lead to more effective treatment strategies.*

#### Research Outcomes

Prof Richardson and his team have made significant progress in understanding the molecular functions of NDRG1 in prostate and other cancers. In particular, they have established that NDRG1 plays a regulatory role in four key signaling pathways that control prostate cancer progression, including the PI3K, TGF- $\beta$ , Ras and PTEN pathways. Interestingly, they identified that NDRG1 promotes the tumour suppressive TGF- $\beta$  signaling, while inhibiting the oncogenic PI3K and Ras pathways.

The team has further investigated the effects of NDRG1 on cell motility and migration. It was found that NDRG1 promotes the membrane expression of two key adhesion proteins, namely E-cadherin and  $\beta$ -catenin, in prostate cancer cells, leading to inhibition of epithelial to mesenchymal transition. Furthermore, their research demonstrated that NDRG1 inhibits the assembly of stress fibers through its inhibition of the ROCK1/pMLC2 pathway in prostate cancer cells, essentially inhibiting the

## CASE STUDY 2

# CONCEPT GRANT CATEGORY

molecular motors responsible for cancer cell motility.

Finally, novel iron chelators that up-regulate NDRG1 expression in prostate cancer cells were found to have similar effects on the abovementioned signaling pathways, also being able to inhibit cell migration, invasion and proliferation of cancer cells. These effects are likely to be mediated through NDRG1 and suggest that iron chelators are a promising new therapeutic strategy for the treatment of prostate cancer. Currently, Prof Richardson's ongoing studies are focused on elucidating the direct molecular effectors of NDRG1 and identifying the regions of the NDRG1 protein that are necessary for its anti-cancer activity.

### Thought leadership

Des is Professor of Cancer Cell Biology at the University of Sydney, a NHMRC Senior Principal Research Fellow and Director of the Iron Metabolism and Chelation Program and elected Leader of the Bosch Institute Cancer, Cell Biology and Development Theme (24 labs) and Bosch Prostate Cancer Focus Group. In addition, Prof Richardson holds international posts in North America (Adjunct Prof, McGill Uni., Canada), Europe (Charles Uni, Czech Rep.) and China (Adjunct Prof, Chinese Acad. Sci., Beijing & Visiting Prof Jiao Tong Univ., Shanghai).

Des's career in research has been extremely productive and his contribution to scientific research enormous. He has published more than 295 articles, reviews, books, chapters and patents. His work is published in a variety of high quality international journals e.g., *Cell*, *Lancet*, *Pharmacol. Rev.*, *Trends Cell Biol.*, *Blood*, *Hepatology*, *EMBO J.*, *PNAS*, *Cancer Res*, *Biochem. J.*, *Clin. Cancer Res*, *JBC*, *J. Med. Chem.* Des currently serves on 19 Editorial Boards which include: *J Biol. Chem*, *Biochem. J.*, *Int. J. Biochem. Cell Biol.*, and *Mol. Pharmacol.*

Prof Richardson holds two suites of National Phase patents as Principal Inventor. Furthermore, a variety of companies (Cormedix Ltd (USA), Cecoura Therap. (USA), Johnson and Johnson, Fermiscan Ltd) have sought his expertise as Consultant and Scientific Advisory Board member.

Prof Richardson is actively involved in teaching while being a full-time researcher. To date, Des has trained 32

PhD students. Many have been "stars" – publishing 6-12 papers and receiving prestigious career awards (NHMRC Peter Doherty, CJ Martin, NHF John Shaw Post-Doctoral Fellowship and Cancer Institute NSW Early Career Award).

PCFA funding has enabled Prof Richardson to establish a prostate cancer research group in his laboratory. The preliminary data generated through this seed funding resulted in leveraging through the NHMRC and the ARC. Two young post-doctoral researchers now actively work in the prostate cancer field: Dr Patric Jansson MSc, PhD and Dr Zaklina Kovacevic.

Patric completed his PhD and has since established himself as a Postdoctoral Fellow at University of Sydney with 16 publications (eight first/senior author publications). He was recently awarded the prestigious CINSW Early Career Post-doctoral Fellowship (\$600,000; 2011-2013) and was successful in the Movember Young Investigator category in 2012 (PI, \$100,000; 2012). Patric leads his own research as the Leader of the Cancer Therapeutics and Targeting Group at Bosch Institute.

Zaklina was awarded her PhD in January 2011 without any emendations and was subsequently awarded the Peter Bancroft Prize at University of Sydney. Since 2006, Zaklina has produced 22 publications in international peer reviewed journals (12 first author). In 2011, she was awarded the NHMRC Early Career Fellowship. She currently holds the position of Post-Doctoral Researcher at University of Sydney and is leader of the NDRG1 Focus Group in Prof Richardson's laboratory at the Department of Pathology.

### Application of research

The research being conducted in the Richardson laboratory has the potential to not only increase our basic knowledge of prostate cancer development and progression, but also to lead to a new, more effective therapeutic strategy for the treatment of this disease.

The group has already identified NDRG1 as an important molecular target for the treatment of prostate cancer, revealing the molecular pathways in which this protein is involved. These studies have significantly contributed to our

understanding of prostate cancer and how crucial molecular pathways are integrated to control the progression and metastasis of this disease. Moreover, the team identified that novel iron chelators, which specifically target NDRG1 in cancer cells, are able to inhibit the driving forces of metastasis and invasion in prostate cancer cells. In fact, these agents were found to be highly effective at inhibiting the progression of numerous neoplasms both *in vitro* and *in vivo*. As a result, these promising new agents are currently being further developed towards clinical trials.

In the past three years, Professor Richardson has obtained \$750,000 from the NHMRC for the preclinical development of DpC compounds – data which is required prior to starting clinical trials. Furthermore, he is in negotiations for financial support for DpC development from venture capital funds.

### Publications

- Assinder, S.J., et al. (2009) The TGF- $\beta$ , PI3/Akt and PTEN pathways: Established and proposed biochemical integration in prostate cancer. *Biochem J.* 417:411-21. IF: 4.9
- Kovacevic Z., et al. (2011). The metastasis suppressor, N-myc downstream regulated gene 1 (NDRG1), up-regulates p21 via p53-independent mechanisms. *Carcinogenesis.* 32(5):732-40. IF: 5.7
- Chen, C., et al. (2012) The iron chelators Dp44mT and DFO inhibit TGF $\beta$ -induced epithelial-mesenchymal transition via up-regulation of N-myc downstream-regulated gene 1 (NDRG1) *J Biol Chem* 287:17016-28. IF: 4.8
- Lovejoy DB, et al. (2011) Antitumor activity of metal-chelating compound Dp44mT is mediated by formation of a redox-active copper complex that accumulates in lysosomes. *Cancer Res.* 2011 Sep 1;71(17):5871-80.
- Quach P, et al. Methemoglobin formation by triapine, di-2-pyridylketone-4,4-dimethyl-3-thiosemicarbazone (Dp44mT), and other anticancer thiosemicarbazones: identification of novel thiosemicarbazones and therapeutics that prevent this effect. *Mol Pharmacol.* 2012, 82(1):105-14.
- Jing, S. et al. (2012) Targeting the Metastasis Suppressor, NDRG1, Using Novel Iron Chelators: Regulation of Stress Fiber-Mediated Tumor Cell Migration via Modulation of the ROCK1/pMLC2 Signaling Pathway. *Molecular Pharmacology* (Nov 2012).

### Leveraged Funding linked directly to funding received from PCFA's Research Program

- Richardson D.R., Assinder S. and Dong Q., Pharmacological Targeting via AKT, PTEN, and TGF-beta Pathway Integration using Novel Therapeutics. *NHMRC Project Grant*, 2010-2012: \$611 875. Application ID: 632778.
- Kovacevic Z. and Richardson D.R. Targeting the Metastasis Suppressor NDRG1 for the Treatment of Pancreatic Cancer. *NHMRC Early Career Fellowship*, 2012-2015: \$294,892. Application ID: APP1037323.
- Kovacevic, Z. *University of Sydney – Sydney Medical School Early Career Researcher Scheme Grant 2011*. Ranked #1 out of 40 applications. \$30,000.
- Jansson, P.J. *University of Sydney – Sydney Medical School Early Career Researcher Scheme Grant 2011*. \$30,000.
- Kovacevic Z. and Richardson D.R. Targeting the Metastasis Suppressor NDRG1 for the Treatment of Pancreatic Cancer. *CINSW Early Career Fellowship*, 2013-2015: \$455,394. Application ID: 12/ECF2-17.

## CASE STUDY 3

# PROJECT GRANT CATEGORY

Dr Kristen Radford,  
Team Leader, Cancer  
Immunotherapies Group,  
Mater Research Institute.



### ASSOCIATE PROFESSOR KRISTEN RADFORD 2011-2013

#### **Project title: Targeted delivery of prostate cancer antigens to dendritic cells for immunotherapy.**

Immunotherapies such as the FDA approved Sipuleucil-T vaccine are promising treatments for prostate cancer. This approach currently relies on extracting blood cells from the patient and delivering cancer proteins to them in the test tube before reinfusing them into the patient, where they stimulate the body's own immune system to attack the cancer. However, this is costly, labour intensive and not suitable or effective for many patients. Kristen and her team aim to develop a novel vaccine concept that will overcome these limitations.

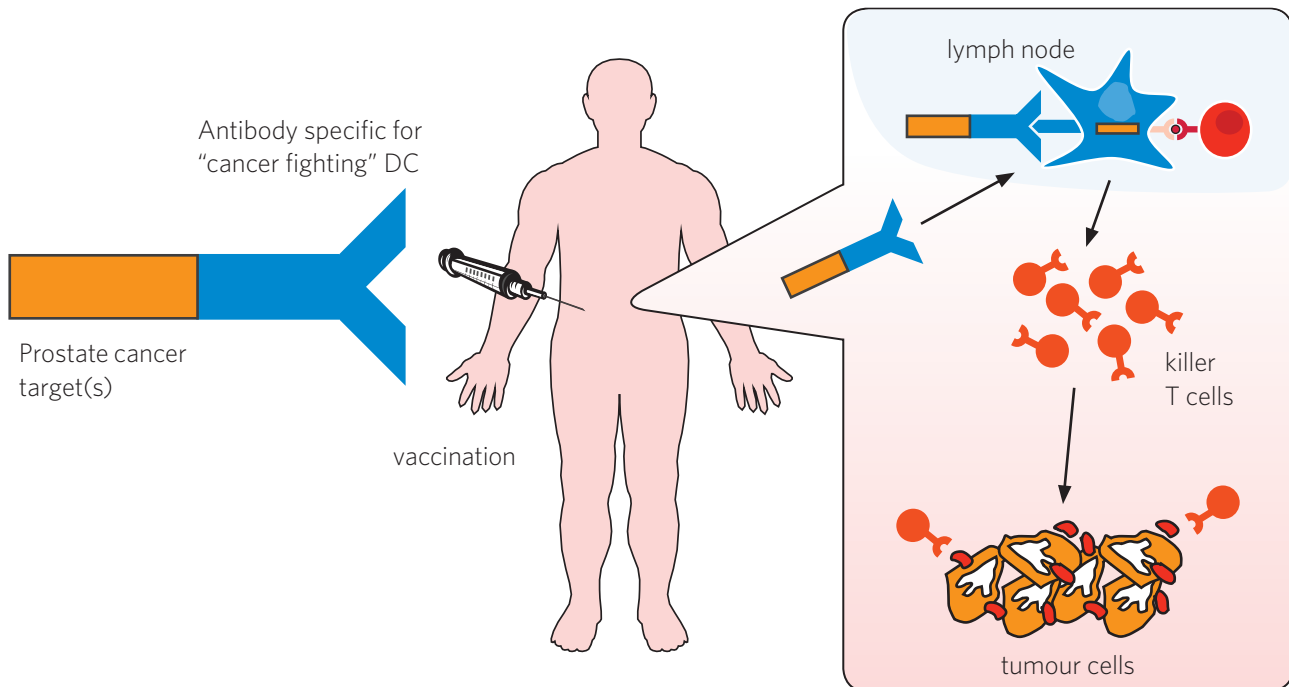
A/Prof Radford (Mater Research) and Dr Lahoud (Burnet Institute) have identified the rare type of blood cell in humans believed to be most effective at fighting cancer, and a novel marker specific to these cells. They are exploiting the novel marker on these cells to construct a vaccine that will deliver their new prostate cancer protein directly to them without needing to remove them from the patient.

### **Knowledge and discovery**

The vaccine is based on the team's three key discoveries. *Firstly*, they showed that rare human blood cells, called CD141+ dendritic cells, possess the desirable characteristics for mounting effective anti-cancer immune responses. *Secondly*, they discovered a novel marker called CLEC9A, that is specifically expressed on these cells. *Thirdly*, they discovered that a prostate cancer protein called kallikrein 4 is a promising target to stimulate anti-cancer immune responses. Their new vaccine will consist of the immune-stimulatory components of kallikrein 4 and other known prostate cancer immune targets. These are fused to an antibody that specifically binds to CLEC9A. So far Kristen and her team have generated a panel of the prostate cancer immune targets that are fused to the CLEC9A-specific antibody, and confirmed that these still bind CLEC9A effectively. These will be compared to antibodies that do not bind dendritic cells and to antibodies that bind all dendritic cells, to confirm their specificity and establish whether there is a selective advantage to delivering the cancer targets only to CD141+ DC. The CD141+ dendritic cells are rare, expensive and difficult to isolate and there are no in vitro culture models to study them. They have therefore developed a novel preclinical model that can be used to generate human CD141+ dendritic cells in mice that lack their own functional immune system. They have shown that these



### Immunotherapy targeting the “cancer fighting” DC



Schematic outline of the proposed vaccine. Prostate cancer targets (example kallikrein 4 or PSMA, in orange) are fused to an antibody that binds to particular DC subtypes (eg the CLEC9A antibody in purple). When injected into the patient this vaccine will be delivered to only to the DC subtype predicted to be best at inducing cancer immune responses. These DC will activate killer T cells to seek and destroy cancer cells expressing the targets contained in the vaccine.

dendritic cells are functionally identical to those in human blood and that this will be a useful model to evaluate our new vaccine constructs.

#### Thought leadership

A/Prof Radford is a Senior Research Fellow and leader of the Cancer Immunotherapies Group at Mater Research and her lab is located in the new Translational Research Institute in Brisbane. She is an Adjunct Associate Professor at the University of Queensland School of Biomedical Sciences. Her research interest lies in the development of new strategies to teach the body’s own immune system to recognise and fight cancer. Underpinning this process are specialised blood cells called dendritic cells. A/Prof Radford’s focus is to understand the biology of these cells in humans and devise ways to exploit them for the development of cancer vaccines. Her group provided the preclinical validation for a Phase I clinical trial of a dendritic cell vaccine for metastatic prostate cancer that was successfully completed in 2009.

A/Prof Radford’s group was one of the first to identify the rare human CD141+ DC subset as being an important target for the development of cancer vaccines. This finding has

been cited >130 times since its publication in *J. Exp. Med.* in 2010 and has been the subject of numerous invitations to speak, including the American Association of Immunology Meeting, 2010, the Australasian Prostate Cancer Conference, 2011, and the Australasian Vaccines and Immunotherapeutic Development Meeting 2012. A/Prof Radford has 25 publications, mostly in the field of cancer immunology has attracted over \$3.5 million in peer reviewed funding. She has received numerous accolades, including a prestigious NHMRC Career Development Level 2 Fellowship (2011-2014), NSW Young Australian of the year (1998), and Runner-up in the Australian Society for Medical Research QLD Senior Research Award (2011).

#### Dr Mireille Lahoud

Dr Lahoud is a Senior Research Fellow and head of the Dendritic Cell Receptors Laboratory at the Burnet Institute in Melbourne and co-investigator in this grant. Dr Lahoud’s research has focused on dendritic cells, the sentinels of the immune system, which are essential for initiating and maintaining effective immune responses. Dr Lahoud’s particular focus is understanding the receptors (proteins) on the surface of dendritic cells, how they are used by dendritic

## CASE STUDY 3

# PROJECT GRANT CATEGORY

cells to recognise “danger signals” in their environment such as infected cells or cancer cells, and importantly, how we can use these receptors as a means of delivering new vaccines for infectious agents or as cancer therapy. This approach of “targeting dendritic cells” holds great potential as the next generation of vaccines.

Mireille recently identified Clec9A, a DC-restricted molecule that is selectively expressed by particular subsets of mouse and human DC, and demonstrated that Clec9A plays an important role in the recognition of damaged cells. Dr Lahoud and colleague Dr Caminschi have demonstrated the great potential of Clec9A as a therapeutic target, utilising the efficiency of antigen delivery to Clec9A for promoting immune responses. Mireille is currently investigating the biological function of Clec9A and its potential for use to improve immune responses to both infectious agents and to cancers. Overall Dr Lahoud has 32 publications, which have attracted 1266 citations (average citations per paper = 42). A major focus for her research is translation from basic research into the clinic. She is first named inventor on four patents, three of which have already entered National Phase, and has a major focus on preclinical studies for therapeutic development of CLEC9A antibodies. Dr Lahoud has been appointed Honorary Senior Research Fellow (Mater Research) and an Adjunct Senior Lecturer (Monash University).

A/Prof Radford and Dr Lahoud co-supervise a PhD student, Ms Kirsteen Tullett (University of Queensland), who is focused on preclinical development of CLEC9A for enhancing immune responses. Ms Tullett will perform the first half of her PhD in the laboratory of Dr Lahoud, where her focus will be developing and validating constructs for the delivery of prostate cancer antigens to Clec9A, and the second half of her project in the laboratory of A/Prof Radford, performing pre-clinical studies on these constructs.

### Application of research

The outcomes and recent FDA approval of Sipuleucil T has invigorated interest in immunotherapy as a promising treatment for metastatic prostate cancer. Understanding how immunotherapy works and devising new strategies that do not require removal of blood cells from the patient will facilitate improvements in this strategy. This research exploits some of the most exciting recent developments in mouse DC biology and tumor immunology and evaluates their suitability as strategies to develop further as clinical vaccines. It will identify the key similarities and differences between mouse and human DC that is essential in order to translate findings from mouse models. The lead vaccine constructs identified in this study will be fully humanised prior to initiation of a Phase I clinical trial. A/Prof Radford has recently relocated to the new Translational Research Institute, of which Mater Research is a key

partner. This facility allows, for the first time in Australia, biopharmaceuticals and treatments to be discovered, produced, clinically tested and manufactured in one location.

Dr Lahoud already holds patents for the use of antibodies to CLEC9A for the delivery of vaccines and enhancement of immune responses. They anticipate that the new constructs for delivery of prostate cancer antigens to CLEC9A that are generated as part of the PCFA funded project will result in novel intellectual property, and will apply for novel patents then.

### Research output

Research results related to the current Movember Project Grant are yet to be published. However, parallel research by the teams of A/Prof Radford and Dr Lahoud, relating to characterising the most appropriate dendritic cell subset for antigen delivery, a comparison of the efficacy of delivering antigens to CLEC9A versus other dendritic cell receptors including the “gold standard” of the field, and identification of the natural ligand of CLEC9A are listed below.

- Wilkinson R, et al. and Radford KJ. (2012). Human kallikrein 4 signal peptide induces cytotoxic T cell responses in healthy donors and prostate cancer patients. *Cancer Immunol Immunother.* 61(2):169-79 (IF 3.7).
- Kassianos AJ, et al. and Radford KJ. (2012). Human CD1c (BDCA-1)+ myeloid dendritic cells secrete IL-10 and display an immuno-regulatory phenotype and function in response to *Escherichia coli*. *Eur J Immunol.* 42(6):1512-22 (IF 5.1).
- Lahoud, M.H., et al. (2011). Targeting antigen to mouse dendritic cells via Clec9A induces potent CD4 T cell responses biased toward a follicular helper phenotype. *J. Immunol.* 187(2):842-50. (IF: 5.788)
- Idoyaga, J., et al. (2011). Comparable Th1 and CD8 T cell immunity by targeting HIV gag p24 to CD8 dendritic cells within antibodies to Langerin, DEC205 and Clec9A. *Proc Natl Acad Sci U S A.* 108(6):2384-9. (IF: 9.681).
- Caminschi, I., et al. (2012). Antibody responses initiated by Clec9A-bearing dendritic cells in normal and *Batf3*(-/-) mice. *Mol. Immunol.* 50 (1-2): 9-17. (IF: 2.897)
- Zhang, J-G.\* , et al, and Lahoud, M.H. # (2012). The Dendritic Cell Receptor Clec9A Binds Damaged Cells via Exposed Actin Filaments. *Immunity.* 36 (4): 646-57. (IF: 21.637)

*This publication was previewed in Immunity (T.B.H.Geijtenbeek 2012, 36:557-559). It was selected as a Research Highlight by Nature Reviews Immunology (Y.Bordon 2012, vol. 12). It featured in a News and Views article in Nature (G.D.Brown 2012, Nature 485:589-590) and in Editor's Choice article in Science (2012, vol. 336). It was selected for evaluation by the Faculty of 1000.*



From left to right ; Pam Saunders (SA node coordinator), Trina Yeadon (project manager), Melissa Papargiris (VIC node coordinator), Judith Clements (Chairman/Director), Anne-Maree Haynes (NSW coordinator), Karen Smith (NSW coordinator), Allison Eckert (QLD node coordinator).

## PROFESSOR JUDITH CLEMENTS

### Funded project: The Australian Prostate Cancer Bioresource (APCB)

The APCB is an initiative of the Australian Prostate Cancer Collaboration, a group of clinicians, scientists and other health professionals dedicated to improving prostate cancer management. It was established by this group to ensure high quality annotated prostate tissue samples were available to all Australian prostate cancer researchers. Its foundation sponsors were, Prostate Cancer Foundation of Australia, the Commonwealth Bank of Australia and Andrology Australia.

This facility provides a significant number of unique services which include: fresh tissue (cancer/'benign' cores) from radical prostatectomies; paraffin embedded tissue sections, buffy coat cells, serum and plasma tissue microarrays.

The APCB team is currently working to value add to these services by providing DNA samples and are in discussion to expand the collection beyond tissues and blood samples collected at radical prostatectomy to men with advanced disease and metastatic deposits as well as the above

boutique collections in developing areas of research. APCB has also recently been engaged by ANZUP to collect and store tissues from the TROG RAVES clinical trial.

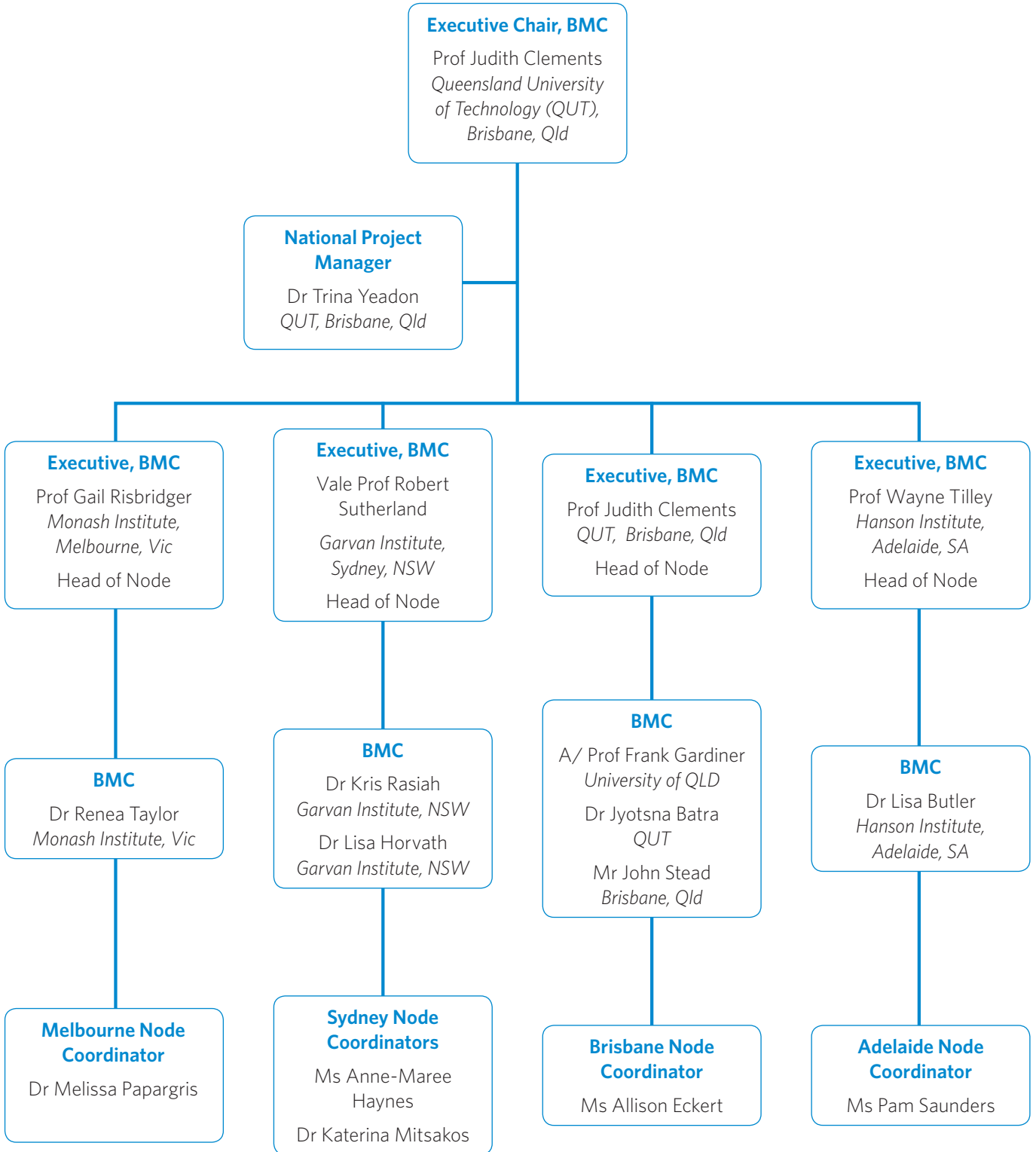
The APCB manages four federated nodes located in Brisbane, Sydney, Melbourne and Adelaide. This bioresource is currently jointly funded by the National Health and Medical Research Council (NHMRC) and PCFA's Research program.

### Governance

Executive Members of the APCB head each collection site across Australia and oversee all strategic and operational direction. These executive members have been instrumental in setting up the facility as they contributed their "in-house" biospecimens to form a National Bioresource and actively sought and gained funding to expand the APCB.

# CASE STUDY 4 ENABLING GRANTS CATEGORY

## Australian Prostate Cancer BioResource Governance Structure



NB: BMC = Bioresource Management Committee



**Professor Judith Clements** is the Executive Chair of the APCB. Judith is the Queensland Node Head of the APCB, a NHMRC Principal Research Fellow and the Scientific Director of the Australian Prostate Cancer Research Centre-Queensland, a dedicated prostate cancer translational research centre which is a partnership between Queensland University of Technology (QUT) and the Princess Alexandra Hospital.

**Professor Gail Risbridger** is the Victorian Node Head of the APCB, a NHMRC Principal Research Fellow and is the Director of the Prostate Cancer Research Program at Monash University, Melbourne, Victoria.

**Professor Wayne Tilley** is the South Australian Node Head of the APCB and is also the Director of the Dame Roma Mitchell Cancer Research Laboratories, at the University of Adelaide and Hanson Institute which incorporates more than 50 researchers and clinicians working on breast and prostate cancer.

**Vale Professor Rob Sutherland** FAA AO (1947-2012) established the New South Wales Node Head of the APCB, Director of the Cancer Research Program at the Garvan Institute of Medical Research for 27 years, inaugural Director of The Kinghorn Cancer Centre and Senior Principal Research Fellow of the National Health and Medical Research Council, died on Wednesday 10th October from pancreatic cancer.

**Associate Professor Lisa Horvath** is currently the acting New South Wales Node Head and is also the Head of the Department of Medical Oncology (Royal Prince Alfred Hospital) at the Sydney Cancer Centre and a Visiting Post-doctoral Scientist at the Garvan Institute for Medical Research. Lisa's research interest is predominantly on tissue biomarkers of prognosis in localised prostate cancer but since returning to clinical practice, her research has focused more on drug resistance in hormone-refractory prostate cancer.

**Dr Trina Yeadon** is the National Project Manager of the Bioresource. Each node has a specialist scientist or registered nurse who recruits and consents patients, collects biospecimens and records relevant clinical data.

## Resource Summary

From 2005-2012 the APCB has collected 100,016 samples from 4,065 men. Since 2007, the APCB has distributed over 3,730 samples to 40 research groups on 68 different occasions.

This important bioresource currently supplies samples to more than 40 ongoing projects nationally and since 2009 has enabled the publication of more than 16 original papers in peer reviewed journals. From 2011-2012, the biobank members have given more than 23 oral presentations to national and international scientific forums. The Bioresource has secured major national and international collaborations.

Through the Brisbane node, it currently provides DNA samples and genotyping and functional SNP analysis expertise to the PRACTICAL Genome Wide Association Study. This node, is now listed as a validation site for serum and plasma biomarkers discovered through the Irish Biomarker Consortium workflow. Importantly, the APCB provides retrospectively collected tissue samples for the International Cancer Genome Consortium Prostate Cancer Project led from Toronto, Canada.

## November Global Action Plan initiative

APCB is currently collecting samples for a clinical follow up to determine mortality outcomes for the 4000 men recruited so far. This will help APCB to identify the size of the aggressive cohort for inclusion in the Movember GAP Biomarker international cohort. APCB is ideally situated for projects of this kind as it can provide both DNA for genetic testing as well as serum or plasma for protein biomarkers from each man.

*“The support of PCFA’s Research Program during the early development has borne fruit as the APCB is now considered a world class best practice resource that is maturing into a highly sought after cohort both nationally and internationally.”*

# APPENDIX I RESEARCH INVESTMENT 2007-2011

Grant ID	Principal Investigator	Grant Title	Administering Institute	State	Movember Contribution	Total Budget
<b>YOUNG INVESTIGATOR GRANTS</b>						
YI 0107	Dr Renea Taylor	Molecular profiling and plasticity of prostate cancer stem cells with disease progression.	Monash University	VIC	\$300,000.00	\$300,000.00
YI 0207	Dr Grant Buchanan	A novel regulator of androgen receptor function in prostate cancer.	University of Adelaide	SA	\$70,000.00	\$400,000.00
YI 0707	Dr Jeff Holst	The role of nutrient amino acids in prostate cancer.	University of Sydney	NSW	\$400,000.00	\$400,000.00
YI 0308	Dr Tanya Day	Androgen receptor signalling in prostate cancer tumourigenesis	University of Adelaide	SA	\$491,208.00	\$491,208.00
YI 0707 Top-Up	Dr Jeff Holst	The role of nutrient amino acids in prostate cancer	University of Sydney	NSW	\$75,000.00	\$75,000.00
YI 0708	A/Prof Daniel Galvão	Population based exercise intervention for prostate cancer patients - RADAR	Edith Cowan University	WA	\$476,025.00	\$476,025.00
YI 1108	Dr Matthew Naylor	Role of $\beta$ 1 integrin in prostate cancer	Garvan Institute of Medical Research	NSW	\$248,429.00	\$248,429.00
YI 1208	Dr Stuart Ellem	Estrogens in prostatitis and prostate cancer	Monash University	VIC	\$93,495.00	\$93,495.00
YI 1408	Dr Michelle Hill	A systems biology approach to elucidate the molecular mechanism of caveolin-1 and statins in prostate cancer progression and metastasis	University of Queensland	QLD	\$497,046.00	\$497,046.00
YI 1908	A/Prof Gianluca Severi	Propionibacterium acnes infection and prostate cancer risk and prognosis: a molecular epidemiology study	Cancer Council Victoria	VIC	\$93,431.00	\$93,431.00
YI 0409	Dr Stuart Ellem	Defining the role of mast cells in prostatitis and prostate cancer	Monash University	VIC	\$248,504.00	\$248,504.00
YI 0010	Dr Matthew Naylor	Role of $\beta$ 1 integrin in prostate cancer	Garvan Institute of Medical Research	NSW	\$100,000.00	\$100,000.00
YI 0310	Dr Luc Furic	Targeting the Eukaryotic Translation Initiation Factor 4E to treat Prostate Cancer	Monash University	VIC	\$285,000.00	\$375,000.00
YI 0410	Dr Xue Qin Yu	Projecting prevalence by stage of care for prostate cancer and estimating future health service needs	Cancer Council NSW	NSW	\$219,644.00	\$309,644.00
YI 0510	Dr Michele Teng	Understanding immunosuppressive pathways in prostate cancer	University of Melbourne	VIC	\$374,257.00	\$374,257.00
YI 0810	Dr Luke Selth	microRNAs in prostate cancer: prognostic markers and therapeutic targets	University of Adelaide	SA	\$356,093.00	\$356,093.00
YI 1310	Dr Addie Wootten	An Online Psychological Support Program for Men with Prostate Cancer	Melbourne Health	VIC	\$97,101.00	\$97,101.00
YI 0911	Dr Mitchell Lawrence	Sorting Wheat from Chaff: Isolating Stromal Stem Cells from Prostate Cancer	Monash University	VIC	\$269,000.00	\$269,000.00
YI 1611	Dr Helen Pearson	Investigating the role of planar cell polarity in prostate cancer	University of Melbourne	VIC	\$350,000.00	\$450,000.00
YI 1911	Dr Patric Jan Jansson	Development of Novel Drugs for Prostate Cancer Treatment that Target the Lysosome	University of Sydney	NSW	\$100,000.00	\$100,000.00
YI 2011	Dr Jason Dowling	Development of high precision MRI based prostate cancer radiation therapy.	CSIRO Australian e-Health Research Centre	QLD	\$200,000.00	\$300,000.00
YI 2211	Dr Jeff Holst	The role of nutrient amino acids in prostate cancer.	University of Sydney	NSW	\$100,000.00	\$100,000.00

Grant ID	Principal Investigator	Grant Title	Administering Institute	State	MoVember Contribution	Total Budget
<b>CONCEPT GRANTS</b>						
CG 0107	Dr Patrick Humbert	The role of polarity regulators in prostate cancer.	University of Melbourne	VIC	\$73,500.00	\$200,000.00
CG 0507	Prof Des Richardson	Development of Novel Anti-Tumour Drugs for the treatment of prostate cancer: Targeting the Drug-Induced expression of the Tumour Metastasis Suppressor, Drg-1.	University of Sydney	NSW	\$150,000.00	\$150,000.00
CG 0108	Prof Mark Smyth	Cell death and mobilizing immunity for the treatment of established prostate cancer	University of Melbourne	VIC	\$300,344.00	\$300,344.00
CG 0507 Top-Up	Prof Des Richardson	Development of Novel Anti-Tumour Drugs for the Treatment of Prostate Cancer: Targeting the Drug-Induced Expression of the Tumour Metastasis Suppressor, Drg-1	University of Sydney	NSW	\$150,000.00	\$150,000.00
CG 0608	A/Prof Vicky Avery	Exploring the Third Dimension of Prostate Cancer Cytomics Through Imaging	Griffith University	QLD	\$280,704.00	\$280,704.00
CG 0808	Prof Markus Seibel	Vitamin D Deficiency and Prostate Cancer Metastasis to Bone	University of Sydney	NSW	\$284,810.00	\$284,810.00
CG 1008	A/Prof David Smith	Integrative systems modelling of prostate cancer bone metastases	University of Melbourne	WA	\$279,845.00	\$279,845.00
CG 1508	Dr Darryl Russell	Role of ADAMTS proteases in prostate cancer metastasis	University of Adelaide	SA	\$180,482.00	\$180,482.00
CG 0409	Dr Caroline Gargett	Identifying progenitor cells in prostate tumour stroma	Monash University	VIC	\$258,246.00	\$258,246.00
CG 1309	Dr Patrick Humbert	A mouse model to investigate the role of BRCA2 in prostate tumourigenesis	University of Melbourne	VIC	\$210,000.00	\$210,000.00
CG 0510	Prof Robert Pike	The potential of serine protease inhibitors to inhibit cancer promoting effects of Cancer Associated fibroblasts in prostate cancer	Monash University	VIC	\$232,305.96	\$232,305.96
CG 0710	A/Prof Gilda Tachedjian	XMRV in Australian Prostate Cancer	Burnet Institute	VIC	\$300,000.00	\$300,000.00
CG 0810	A/Prof Pamela Sykes	Whole-body low dose X-radiation treatment to delay or prevent the progression of prostate cancer to advanced stage disease	Flinders University	SA	\$243,367.00	\$243,367.00
CG 1010	A/Prof Nigel Waterhouse	Sensitising Prostate Cancer Cells to Granule Induced Death by Cytotoxic T Lymphocytes is an Essential Step in Anti-Prostate Cancer Immunotherapy	Mater Medical Research Institute	QLD	\$250,000.00	\$250,000.00
CG 1210	Prof Trevor Hambley	Using PSA to Activate Anticancer Prodrugs in Prostate Cancers	University of Sydney	NSW	\$249,435.00	\$249,435.00
CG 0611	Prof Roger Daly	The impact of TMPRSS/ERG expression on the prostate cancer kinome.	Garvan Institute of Medical Research	NSW	\$298,598.00	\$298,598.00
CG 1111	A/Prof Louis Rendina	A unique class of tumour-specific drugs for the potential treatment and imaging of advanced prostate cancer	University of Sydney	NSW	\$299,119.00	\$299,119.00
CG 1511	A/Prof Ross Hannan	Inhibition of Pol I transcription as a novel approach to treat prostate cancer	University of Melbourne	VIC	\$300,000.00	\$300,000.00
CG 1611	A/Prof Wayne Phillips	The role of aberrant PI3K signalling in prostate cancer progression and metastasis	University of Melbourne	VIC	\$240,000.00	\$240,000.00

# APPENDIX I RESEARCH INVESTMENT 2007-2011

Grant ID	Principal Investigator	Grant Title	Administering Institute	State	Movember Contribution	Total Budget
<b>EQUIPMENT GRANTS</b>						
EG 0307	Prof Melissa Southey	LightCycler 480 Real-Time PCR system.	University of Melbourne	VIC	\$50,000.00	\$50,000.00
EG 0407	A/Prof Sue Henshall	DAKO Autostainer Plus	Garvan Institute of Medical Research	NSW	\$50,000.00	\$50,000.00
EG 0108	Prof Arthur Shulkes	High Pressure Binary Liquid Chromatography System	University of Melbourne	VIC	\$50,000.00	\$50,000.00
EG 0308	Prof Des Richardson	LightCycler 480 Real-Time PCR System	University of Sydney	NSW	\$60,000.00	\$60,000.00
EG 0209	Prof Ronald Quinn	Agilent Bravo Automated Liquid Handler	Griffith University	QLD	\$50,000.00	\$50,000.00
EG 0409	Prof John EJ Rasko	IVIS Lumina 11 quantitative fluorescent and bioluminescent imager	University of Sydney	NSW	\$40,000.00	\$40,000.00
EG 0509	Prof Des Richardson	Luminex 200 Analysis system	University of Sydney	NSW	\$50,000.00	\$50,000.00
EG 0809	Prof Wayne Tilley	Bio-Rad CFX384- Real time PCR Detection System	University of Adelaide	SA	\$68,750.00	\$68,750.00
EG 0909	Prof Pamela Russell	Syngene G Box Chemi XT unit	Queensland University of Technology	QLD	\$30,000.00	\$30,000.00
EG 0110	Prof Roger Daly	TSQ Vantage Triple Quadrupole Mass Spectrometer System	Garvan Institute of Medical Research	NSW	\$75,000.00	\$75,000.00
EG 0210	Prof Ian Davis	FACSAria Cell Sorter	Ludwig Institute for Cancer Research	VIC	\$100,000.00	\$100,000.00
EG 0310	A/Prof John Hooper	BMG "POLARstar Omega" Microplate Reader	Mater Medical Research Institute	QLD	\$50,000.00	\$50,000.00
EG 0410	Prof Des Richardson	xCELLigence Real Time Cell Analysis System	University of Sydney	NSW	\$85,000.00	\$85,000.00
EG 0510	A/Prof Noel Whitaker	Digital microscope camera system	University of New South Wales	NSW	\$50,000.00	\$50,000.00
EG 0710/0810	Prof Robert Newton	pQCT XCT 3000 Clinical	Edith Cowan University	WA	\$80,000.00	\$80,000.00
EG 0910	Dr Ora Bernard	Mass Spectrometry Facility	St Vincent's Institute	VIC	\$18,707.00	\$18,707.00
EG 0311	Dr Luc Furic	Aperio ScanScope CS (Digital slide scanner) with operating software and server	Monash University	VIC	\$50,000.00	\$50,000.00
EG 0711	Prof Robert Newton	Actigraph Physical Activity Monitoring System	Edith Cowan University	WA	\$33,000.00	\$33,000.00
<b>PDCCRS GRANTS</b>						
CA 487916	Prof Ian Davis	Evaluation and application of PET scanning in the treatment of localised prostate cancer	Ludwig Institute for Cancer Research	VIC	\$100,000.00	\$100,000.00
CA 491195	A/Prof Martin Lackmann	Preclinical and clinical evaluation of an antibody therapeutic targeting prostate carcinoma	Monash University	VIC	\$329,504.17	\$329,504.17
CA 497244	Prof Colleen Nelson	MicroRNAs in Prostate Cancer: Novel Biomarkers and Potential Therapeutic Targets	Queensland University of Technology	QLD	\$400,000.00	\$400,000.00
CA 510239	Prof Pamela Russell	Preclinical evaluation of novel prostate-targeted nanoparticles for imaging primary and metastatic prostate cancer	University of New South Wales	QLD	\$293,762.50	\$293,762.50
CA 596858	A/Prof Lisa Horvath	Identifying and targeting Docetaxel resistance in hormone refractory prostate cancer	Garvan Institute of Medical Research	NSW	\$389,000.00	\$389,000.00
CA 603107	Prof Ian Davis	Mechanisms of abiraterone resistance in prostate cancer	Ludwig Institute for Cancer Research	VIC	\$393,000.00	\$393,000.00
CA 606927	Prof Jeremy Millar	Pilot of a population-based prostate cancer clinical registry	Monash University	VIC	\$197,625.00	\$197,625.00
CA 627229	Dr Lisa Butler	A combinatorial approach targeting androgen signalling for treatment of prostate cancer	University of Adelaide	SA	\$291,844.00	\$291,844.00

Grant ID	Principal Investigator	Grant Title	Administering Institute	State	Member Contribution	Total Budget
<b>PDCCRS GRANTS (CONTINUED)</b>						
CA 628592	A/Prof Annette Haworth	Translation of clinical and functional imaging data to brachytherapy treatment optimisation for prostate cancer	University of Melbourne	VIC	\$78,543.00	\$78,543.00
CA 1004932	Prof Jeremy Millar	START: A Phase III Study of Active Surveillance Therapy Against Radical Treatment in Patients Diagnosed with Favourable Risk Prostate Cancer	University of Sydney	VIC	\$299,382.00	\$299,382.00
CA 1029901	Prof Robert Newton	Can exercise ameliorate treatment toxicity during the initial phase of testosterone suppression in prostate cancer patients? Is this more effective than delayed rehabilitation and what is the time course and persistence of benefits?	Edith Cowan University	WA	\$148,758.66	\$148,758.66
CA 1032970	Dr Grant Buchanan	Androgen receptor action in the prostate cancer microenvironment	University of Adelaide	SA	\$287,792.00	\$287,792.00
<b>PROJECT GRANTS</b>						
BCG 0109-NIRAP	Prof Colleen Nelson	NIRAP- Support Australian Canadian Prostate Cancer Research Centre	Queensland University of Technology	QLD	\$300,000.00	\$300,000.00
BCG 0110	Prof Judith Clements	PCFA support for the APCC Bioresource	Queensland University of Technology	QLD	\$1,000,000.00	\$1,000,000.00
BCG 0210	Prof Wayne Tilley	PCFA support for the Adelaide Prostate Cancer Research Centre	University of Adelaide	SA	\$750,000.00	\$750,000.00
NHMRC CDA	Dr Benjamin Thierry	Application of nanoparticle drug delivery in prostate cancer	University of South Australia	SA	\$225,000.00	\$225,000.00
BRP 02	Prof Pamela Russell	Preclinical evaluation of novel prostate targeted nanoparticles for imaging of primary and metastatic prostate cancer	University of New South Wales	QLD	\$100,000.00	\$100,000.00
BRP 03	Prof Tom Reeve	Clinical Guidelines for Advanced Prostate Cancer	University of Sydney	NSW	\$59,188.00	\$59,188.00
BRP 04	A/Prof Ronnie Cohen	Prostate Biopsy Database	UroPath	WA	\$83,084.00	\$83,084.00
BRP 05	Prof Mari Botti	Patient outcomes after open and minimally invasive surgery for prostate cancer	Deakin University	VIC	\$191,575.00	\$191,575.00
BRP 06	Prof Robert Newton	A randomized controlled trial of exercise to reduce co-morbidity in men receiving therapy for prostate cancer	Edith Cowan University	WA	\$244,328.00	\$244,328.00
BRP 07	A/Prof Christopher Hovens	Bone marrow - derived progenitor cells as biomarkers of prostate cancer development, metastasis, and treatment response	Victorian Prostate Cancer Research Consortium	VIC	\$460,000.00	\$460,000.00
PR 0207	Prof Dietmar Hutmacher	Application of a human bone engineering platform to an in vivo prostate cancer model.	Queensland University of Technology	QLD	\$291,920.00	\$291,920.00
PR 0407	Dr Gillian Mitchell	Identification of men with a genetic predisposition to prostate cancer. Targeted screening in BRCA1/2 mutation carriers and controls - The IMPACT Study.	University of Melbourne	VIC	\$50,000.00	\$50,000.00
PR 0607	Dr Sally-Anne Stephenson	EPHB4 as a target for anti-prostate cancer therapy.	Queensland University of Technology	QLD	\$183,352.00	\$183,352.00
PR 0907	Dr Jonathan Harris	Inhibition of sex hormone binding globulin proteolysis by kallikrein-related protease 4; a potential target for prostate cancer therapy.	Queensland University of Technology	QLD	\$253,854.00	\$253,854.00
PR 1007	Dr Jared Martin	A randomised trial of a shorter radiation fractionation schedule for the treatment of localised prostate cancer (PROFIT: prostate fractionated irradiation trial).	St Andrews Hospital Toowoomba	QLD	\$100,000.00	\$100,000.00
PR 1307	Dr Kristen Radford	Potential of Human Kallikrein 4 as a novel target for prostate cancer immunotherapy.	Mater Medical Research Institute	QLD	\$240,000.00	\$240,000.00
PR 1907	Prof Samuel Breit	Macrophage inhibitory cytokine-1 (MIC-1) for the prediction of prostate cancer outcomes.	St Vincent's Hospital	NSW	\$220,000.00	\$220,000.00

# APPENDIX I RESEARCH INVESTMENT 2007-2011

Grant ID	Principal Investigator	Grant Title	Administering Institute	State	Movember Contribution	Total Budget
PROJECT GRANTS (CONTINUED)						
PR 2907	Prof Pei Xiang Xing	Preclinical studies on targeting a novel oncoprotein oncoprotein Cripto to treat prostate cancer using human anti-Cripto antibodies.	Burnet Institute	VIC	\$140,375.00	\$140,375.00
PR 3207	Prof Merlin Crossley	The regulation of E-cadherin expression and Tumour Metastasis in prostate cancer.	University of Sydney	NSW	\$296,359.00	\$296,359.00
PR 3607	A/Prof Andrew Brown	Cholesterol, Statins and Prostate Cancer	University of New South Wales	NSW	\$291,392.50	\$291,392.50
PR 3707	Dr Rosetta Martiniello-Wilks	Tri-modal targeted stem cell gene therapy for prostate cancer metastases	University of Sydney	NSW	\$300,000.00	\$300,000.00
PG 0508	Prof John Mills	Does Rhoc expression in prostate cancer predict local invasion or metastases?	TissuPath Pty Ltd	VIC	\$81,247.00	\$81,247.00
PG 0608	Prof Gail Risbridger	Targeting prostate cancer stem cells with beta selective estrogen receptor modulators	Monash University	VIC	\$93,743.00	\$93,743.00
PG 0708	A/Prof Amanda Spurdle	The Role of Kallikrein Gene Variants in Prostate Cancer Etiology, Detection and Disease Progression	Queensland Institute of Medical Research	QLD	\$249,847.00	\$249,847.00
PG 2508	Prof Colleen Nelson	De Novo Steroidogenesis in Prostate Tumours Promoted by Insulin During Metabolic Syndrome Induced by Androgen Deprivation Therapy	Queensland University of Technology	QLD	\$93,750.00	\$93,750.00
PG 3508	Prof Robert ('Frank') Gardiner	The relationship between PCA3 and BMCC1 in prostate cancer development and detection	University of Queensland	QLD	\$394,390.00	\$394,390.00
PG 3708	Prof Peter Leedman	Functional role of a novel nuclear receptor coregulator in prostate cancer	Western Australian Institute for Medical Research	WA	\$114,750.00	\$114,750.00
PG 4008	Prof Dianne O'Connell	Use of complementary and lifestyle therapies by men with prostate cancer: a population-based study	Cancer Council NSW	NSW	\$137,766.00	\$137,766.00
PR 3707 Top-Up	Dr Rosetta Martiniello-Wilks	Tri-modal targeted stem cell gene therapy for prostate cancer metastases	University of Sydney	NSW	\$94,000.00	\$94,000.00
OFR 0109	Mr Peter Fisher	PCFA/CCT prostate education project	Cancer Council Tasmania	TAS	\$150,000.00	\$150,000.00
PG 0409	Prof Pamela Russell	Targeted nanoparticles for imaging prostate cancer	Queensland University of Technology	QLD	\$125,000.00	\$125,000.00
PG 0709	Prof Gail Risbridger	Novel estrogen therapy for advanced prostate cancer	Monash University	VIC	\$246,831.00	\$246,831.00
PG 1009	A/Prof Ygal Haupt	The involvement of the E6AP-PML regulatory pathway in the development of prostate cancer	University of Melbourne	VIC	\$249,875.00	\$249,875.00
PG 1809	A/Prof Howard Gurney	Metformin in prevention of androgen deprivation therapy-induced insulin resistance and metabolic syndrome (MVENT-study)	Westmead Hospital	NSW	\$90,610.00	\$90,610.00
PG 2009	Prof Jiri Neuzil	Targeting mitochondria for selective therapy of prostate cancer	Griffith University	QLD	\$150,000.00	\$150,000.00
PG 2709	A/Prof Gianluca Severi	Propionibacterium acnes infection and prostate cancer risk and prognosis: a molecular epidemiology study	Cancer Council Victoria	VIC	\$250,000.00	\$250,000.00
PG 3009	Prof Paul de Souza	A translational and pharmacokinetic study of a novel, orally-active, targeted treatment for hormone refractory prostate cancer	University of New South Wales	NSW	\$450,000.00	\$450,000.00
PG 3409	Prof Peter Leedman	Functional role of a novel nuclear receptor coregulator in prostate cancer	Western Australian Institute for Medical Research	WA	\$250,000.00	\$250,000.00
ARC PTNG 0110	A/Prof Patricia Livingston	Improving psychological and physiological outcomes for prostate cancer survivors	Deakin University	VIC	\$70,000.00	\$70,000.00

Grant ID	Principal Investigator	Grant Title	Administering Institute	State	Member Contribution	Total Budget
<b>PROJECT GRANTS (CONTINUED)</b>						
NHMRC PTNG 0111	Prof Mary Haines	Improving evidence based care for locally advanced prostate cancer – a randomised phased trial of clinical guideline implementation through a clinical network.	Sax Institute	NSW	\$537,674.00	\$537,674.00
OFR 0110	Prof Richard Turner	Clinical Teaching Associate program for sensitive male examinations - Tasmania	University of Tasmania	TAS	\$52,380.00	\$52,380.00
OFR 0210	Dr Christine Fairbank	Urological Teaching Associate (UTA) Program - Victoria	University of Melbourne	VIC	\$101,378.00	\$101,378.00
PG 0810	Dr Renea Taylor	Imbalance of Stromal Steroid Receptor Signalling Contributes to Prostate Cancer Progression	Monash University	VIC	\$250,000.00	\$250,000.00
PG 1910	Dr Nick Ferris	Prostate Bed Radiotherapy Margins Assessed With 3-Tesla Cine Magnetic Resonance Imaging.	University of Melbourne	VIC	\$84,971.00	\$84,971.00
PG 2110	Dr Kristen Radford	Targeted delivery of prostate cancer antigens to dendritic cells for immunotherapy.	Mater Medical Research Institute	QLD	\$375,000.00	\$375,000.00
PG 2210	Dr Grant Buchanan	Targeting chemokine signalling in prostate cancer	University of Adelaide	SA	\$250,000.00	\$250,000.00
PG 2710	A/Prof Andrew Brown	Exploiting Cholesterol Metabolism to Fight Prostate Cancer	University of New South Wales	NSW	\$250,000.00	\$250,000.00
PG 2910	Dr Mika Jormakka	Structural analysis of amino acid transporters that regulate the mTOR pathway.	University of Sydney	NSW	\$250,000.00	\$250,000.00
PG 3010	Prof Judith Clements	PSA as a therapeutic target: an integrated systems biology approach to discover the pathways initiated by PSA activity in prostate cancer progression.	Queensland University of Technology	QLD	\$373,352.00	\$373,352.00
PG 3510	Prof Peter Leedman	microRNAs that regulate erbB-2 and androgen receptor signalling pathways in prostate cancer	Western Australian Institute for Medical Research	WA	\$250,000.00	\$250,000.00
PG 3810	A/Prof John Hooper	Next generation DNA sequence analysis of prostate tumour initiating cells.	Mater Medical Research Institute	QLD	\$250,000.00	\$250,000.00
PG 4110	Prof Andrew Boyd	Expression and function of Eph and ephrin proteins in prostate cancer	Queensland Institute of Medical Research	QLD	\$250,000.00	\$250,000.00
PG 4310	Prof Susan Clark	Histone Variant H2A.Z in Epigenetic Gene Deregulation Plays a Key Role in Prostate Cancer	Garvan Institute of Medical Research	NSW	\$250,000.00	\$250,000.00
PG 4410	Prof Colleen Nelson	Identification of RNA species regulated by YB-1 and G3BPs in prostate cancer cells	Queensland University of Technology	QLD	\$250,000.00	\$250,000.00
PG 4610	Prof Leonie Ashman	Identifying the mechanisms underlying altered expression and mode of action of tetraspanins CD151 and CD9 in metastasis: progression to targeted treatment for prostate cancer.	University of Newcastle	NSW	\$375,000.00	\$375,000.00
NDDA 0411	Prof Pamela Russell	Simultaneous Imaging and Drug Delivery for Prostate Cancer Theranostics	Queensland University of Technology	QLD	\$100,000.00	\$100,000.00
NDDA 1311	Prof Ian Davis	Development of novel sex steroid-based PET tracers for prostate cancer	Ludwig Institute for Cancer Research	VIC	\$213,000.00	\$213,000.00
NDDA 1511	Prof Daniel Galvão	Efficacy and safety of a modular multi-modal exercise program in prostate cancer patients with bone metastases: a randomized controlled trial	Edith Cowan University	WA	\$296,820.00	\$296,820.00
NDDA 1811	Dr Elizabeth Williams	How do castrate resistant prostate cancer cells escape dormancy?	Monash University	VIC	\$300,000.00	\$300,000.00
NDDA 2711	Dr Lisa Butler	Exploiting metabolic alterations to more accurately monitor prostate cancer therapy	University of Adelaide	SA	\$299,817.00	\$299,817.00
PRIAS	Mr Michael Nugara	PRIAS (Prostate cancer Research International: Active Surveillance) - Active Surveillance Database	Urological Society of Australia and New Zealand	NSW	\$464,600.00	\$464,600.00



# APPENDIX 2

## PEER REVIEWED PUBLISHED PAPERS 2007-2011

Grant ID	Principal Investigator	Year Published	Publication Title	Impact Factor	Citation Index
PEER-REVIEWED PAPER & REVIEWS					
CG 0107	Dr Patrick Humbert	2011	Pearson HB, Perez-Mancera PA, Dow LE, Ryan A, Tennstedt P, Bogani D, Elsum I, Greenfield A, Tuveson DA, Simon R, Humbert PO. SCRIB expression is deregulated in human prostate cancer, and its deficiency in mice promotes prostate neoplasia. <i>J Clin Invest</i> . 2011 Nov;121(11):4257-67. doi: 10.1172/JCI58509. Epub 2011 Oct 3. PubMed PMID: 21965329; PubMed Central PMCID: PMC3223862	15.387	5
CG 0108	Prof Mark Smyth	2010	Teng MW, Andrews DM, McLaughlin N, von Scheidt B, Ngiow SF, Möller A, Hill GR, Iwakura Y, Oft M, Smyth MJ. IL-23 suppresses innate immune response independently of IL-17A during carcinogenesis and metastasis. <i>Proc Natl Acad Sci U S A</i> . 2010 May 4;107(18):8328-33. Epub 2010 Apr 19. PubMed PMID: 20404142; PubMed Central PMCID: PMC2889517	9.432	20
CG 0108	Prof Mark Smyth	2011	Teng MW, von Scheidt B, Duret H, Towne JE, Smyth MJ. Anti-IL-23 monoclonal antibody synergizes in combination with targeted therapies or IL-2 to suppress tumor growth and metastases. <i>Cancer Res</i> . 2011 Mar 15;71(6):2077-86. Epub 2011 Jan 31. PubMed PMID: 21282337	7.543	3
CG 0108	Prof Mark Smyth	2011	Christiansen AJ, West A, Banks KM, Haynes NM, Teng MW, Smyth MJ, Johnstone RW. Eradication of solid tumors using histone deacetylase inhibitors combined with immune-stimulating antibodies. <i>Proc Natl Acad Sci U S A</i> . 2011 Mar 8;108(10):4141-6. Epub 2011 Feb 22. PubMed PMID: 21368108; PubMed Central PMCID: PMC3054015	9.432	6
CG 0108	Prof Mark Smyth	2011	Martin BP, Frew AJ, Bots M, Fox S, Long F, Takeda K, Yagita H, Atadja P, Smyth MJ, Johnstone RW. Antitumor activities and on-target toxicities mediated by a TRAIL receptor agonist following cotreatment with panobinostat. <i>Int J Cancer</i> . 2011 Jun 1;128(11):2735-47. doi: 10.1002/ijc.25594. Epub 2010 Oct 13. PubMed PMID: 20715169	4.722	3
CG 0608	A/Prof Vicky Avery	2012	Windus LC, Kiss DL, Glover T, Avery VM. In vivo biomarker expression patterns are preserved in 3D cultures of Prostate Cancer. <i>Exp Cell Res</i> . 2012 Nov 15;318(19):2507-19. doi: 10.1016/j.yexcr.2012.07.013. Epub 2012 Jul 27. PubMed PMID: 22841689	3.589	0
CG 0808	Prof Markus Seibel	2011	Zheng Y, Zhou H, Ooi LL, Snir AD, Dunstan CR, Seibel MJ. Vitamin D deficiency promotes prostate cancer growth in bone. <i>Prostate</i> . 2011 Jun 15;71(9):1012-21. doi: 10.1002/pros.21316. Epub 2010 Dec 28. PubMed PMID: 21541977	3.081	5
CG 1008	A/Prof David Smith	2012	Buenzli PR, Pivonka P, Gardiner BS, Smith DW. Modelling the anabolic response of bone using a cell population model. <i>J Theor Biol</i> . 2012 Aug 21;307:42-52. Epub 2012 May 8. Erratum in: <i>J Theor Biol</i> . 2012 Sep 21;309:204. PubMed PMID: 22579551	2.574	1
CG 0710	A/Prof Gilda Tachedjian	2012	Simin D Rezaei, Anna C Hearps, John Mills, John Pedersen, Gilda Tachedjian. Lack of evidence for XMRV or related gammaretroviruses in Australian prostate cancer patients. <i>Virology Journal</i> . Accepted with changes: 15 November 2012 MS ID: 8736580327723296	2.34	0
CG 1010	A/Prof Nigel Waterhouse	2011	Adams MN, Christensen ME, He Y, Waterhouse NJ, Hooper JD. The role of palmitoylation in signalling, cellular trafficking and plasma membrane localization of protease-activated receptor-2. <i>PLoS One</i> . 2011;6(11):e28018. Epub 2011 Nov 29. PubMed PMID: 22140500; PubMed Central PMCID: PMC3226677	4.351	2
CG 1010	A/Prof Nigel Waterhouse	2011	Wortmann A, He Y, Christensen ME, Linn M, Lumley JW, Pollock PM, Waterhouse NJ, Hooper JD. Cellular settings mediating Src Substrate switching between focal adhesion kinase tyrosine 861 and CUB-domain-containing protein 1 (CDCP1) tyrosine 734. <i>J Biol Chem</i> . 2011 Dec 9;286(49):42303-15. Epub 2011 Oct 12. PubMed PMID: 21994943; PubMed Central PMCID: PMC3234987	5.328	1
CG 1010	A/Prof Nigel Waterhouse	2012	Sutton VR, Sedelies K, Dewson G, Christensen ME, Bird PI, Johnstone RW, Kluck RM, Trapani JA, Waterhouse NJ. Granzyme B triggers a prolonged pressure to die in Bcl-2 overexpressing cells, defining a window of opportunity for effective treatment with ABT-737. <i>Cell Death Dis</i> . 2012 Jul 5;3:e344. doi: 10.1038/cddis.2012.73. PubMed PMID: 22764103; PubMed Central PMCID: PMC3406577	5.333	0
EG 0307	Prof Melissa Southey	2008	Eeles RA, Kote-Jarai Z, Giles GG, Olama AA, Guy M, Jugurnauth SK, Mulholland S, Leongamornlert DA, Edwards SM, Morrison J, Field HI, Southey MC, Severi G, Donovan JL, Hamdy FC, Dearnaley DP, Muir KR, Smith C, Bagnato M, Ardern-Jones AT, Hall AL, O'Brien LT, Gehr-Swain BN, Wilkinson RA, Cox A, Lewis S, Brown PM, Jhavar SG, Tymrakiewicz M, Lophatananon A, Bryant SL; UK Genetic Prostate Cancer Study Collaborators; British Association of Urological Surgeons' Section of Oncology; UK ProtecT Study Collaborators, Horwich A, Huddart RA, Khoo VS, Parker CC, Woodhouse CJ, Thompson A, Christmas T, Ogden C, Fisher C, Jamieson C, Cooper CS, English DR, Hopper JL, Neal DE, Easton DF. Multiple newly identified loci associated with prostate cancer susceptibility. <i>Nat Genet</i> . 2008 Mar;40(3):316-21. Epub 2008 Feb 10. PubMed PMID: 18264097	34.284	322



Grant ID	Principal Investigator	Year Published	Publication Title	Impact Factor	Citation Index
PEER-REVIEWED PAPER & REVIEWS (CONTINUED)					
EG 0307	Prof Melissa Southey	2008	Kote-Jarai Z, Easton DF, Stanford JL, Ostrander EA, Schleutker J, Ingles SA, Schaid D, Thibodeau S, Dörk T, Neal D, Donovan J, Hamdy F, Cox A, Maier C, Vogel W, Guy M, Muir K, Lophatananon A, Kedda MA, Spurdle A, Steginga S, John EM, Giles G, Hopper J, Chappuis PO, Hutter P, Foulkes WD, Hamel N, Salinas CA, Koopmeiners JS, Karyadi DM, Johanneson B, Wahlfors T, Tammela TL, Stern MC, Corral R, McDonnell SK, Schürmann P, Meyer A, Kuefer R, Leongamornlert DA, Tymrakiewicz M, Liu JF, O'Mara T, Gardiner RA, Aitken J, Joshi AD, Severi G, English DR, Southey M, Edwards SM, Al Olama AA; PRACTICAL Consortium, Eeles RA. Multiple novel prostate cancer predisposition loci confirmed by an international study: the PRACTICAL Consortium. <i>Cancer Epidemiol Biomarkers Prev.</i> 2008 Aug;17(8):2052-61. Erratum in: <i>Cancer Epidemiol Biomarkers Prev.</i> 2008 Oct;17(10):2901. Donovan, Jenny [added]; Hamdy, Freddie [added]. PubMed PMID: 18708398; PubMed Central PMCID: PMC2776652	4.289	0
EG 0307	Prof Melissa Southey	2009	Guy M, Kote-Jarai Z, Giles GG, Al Olama AA, Jugurnauth SK, Mulholland S, Leongamornlert DA, Edwards SM, Morrison J, Field HI, Southey MC, Severi G, Donovan JL, Hamdy FC, Dearnaley DP, Muir KR, Smith C, Bagnato M, Ardern-Jones AT, Hall AL, O'Brien LT, Gehr-Swain BN, Wilkinson RA, Cox A, Lewis S, Brown PM, Jhavar SG, Tymrakiewicz M, Lophatananon A, Bryant SL; UK Genetic Prostate Cancer Study Collaborators; British Association of Urological Surgeons' Section of Oncology; UK ProtecT Study Collaborators, Horwich A, Huddart RA, Khoo VS, Parker CC, Woodhouse CJ, Thompson A, Christmas T, Ogden C, Fisher C, Jameson C, Cooper CS, English DR, Hopper JL, Neal DE, Easton DF, Eeles RA. Identification of new genetic risk factors for prostate cancer. <i>Asian J Androl.</i> 2009 Jan;11(1):49-55. Epub 2008 Dec 1. Review. PubMed PMID: 19050691	1.688	5
EG 0108	Prof Arthur Shulkes	2009	Ischia J, Patel O, Shulkes A, Baldwin GS. Gastrin-releasing peptide: different forms, different functions. <i>Biofactors.</i> 2009 Jan-Feb;35(1):69-75. Review. PubMed PMID: 19319848	0.912	8
EG 0308	Prof Des Richardson	2008	Assinder SJ, Stanton JA, Prasad PD. Transgelin: an actin-binding protein and tumour suppressor. <i>Int J Biochem Cell Biol.</i> 2009 Mar;41(3):482-6. Epub 2008 Mar 10. Review. PubMed PMID: 18378184.	4.887	48
EG 0308	Prof Des Richardson	2008	Niknami M, Patel M, Witting PK, Dong Q. Molecules in focus: cytosolic phospholipase A2-alpha. <i>Int J Biochem Cell Biol.</i> 2009 May;41(5):994-7. Epub 2008 Aug 8. Review. PubMed PMID: 18761105	4.887	14
EG 0308	Prof Des Richardson	2008	Assinder SJ, Dong Q, Mangs H, Richardson DR. Pharmacological targeting of the integrated protein kinase B, phosphatase and tensin homolog deleted on chromosome 10, and transforming growth factor-beta pathways in prostate cancer. <i>Mol Pharmacol.</i> 2009 Mar;75(3):429-36. Epub 2008 Dec 3. Review. PubMed PMID: 19052170.	4.531	2
EG 0308	Prof Des Richardson	2009	Yu Y, Kalinowski DS, Kovacevic Z, Siafakas AR, Jansson PJ, Stefani C, Lovejoy DB, Sharpe PC, Bernhardt PV, Richardson DR. Thiosemicarbazones from the old to new: iron chelators that are more than just ribonucleotide reductase inhibitors. <i>J Med Chem.</i> 2009 Sep 10;52(17):5271-94. Review. PubMed PMID: 19601577.	4.802	49
EG 0308	Prof Des Richardson	2009	Salomon R, Young L, Macleod D, Yu XL, Dong Q. Probasin promoter-driven expression of ID1 is not sufficient for carcinogenesis in rodent prostate. <i>J Histochem Cytochem.</i> 2009 Jun;57(6):599-604. Epub 2009 Mar 2. PubMed PMID: 19255251; PubMed Central PMCID: PMC2690411	2.372	2
EG 0308	Prof Des Richardson	2009	Fei J, Hong A, Dobbins TA, Jones D, Lee CS, Loo C, Al-Ghamdi M, Harnett GB, Clark J, O'Brien CJ, Rose B. Prognostic significance of vascular endothelial growth factor in squamous cell carcinomas of the tonsil in relation to human papillomavirus status and epidermal growth factor receptor. <i>Ann Surg Oncol.</i> 2009 Oct;16(10):2908-17. Epub 2009 Jul 15. PubMed PMID: 19603236	4.130	6
EG 0308	Prof Des Richardson	2009	Assinder SJ, Dong Q, Kovacevic Z, Richardson DR. The TGF-beta, PI3K/Akt and PTEN pathways: established and proposed biochemical integration in prostate cancer. <i>Biochem J.</i> 2009 Jan 15;417(2):411-21. Review. PubMed PMID: 19099539	5.155	22
EG 0308	Prof Des Richardson	2009	Niknami M, Dong Q, Witting PK. Pitfalls in the use of arachidonic acid oxidation products to assign lipoxygenase activity in cancer cells. <i>Free Radic Res.</i> 2009 Oct;43(10):951-6. Epub 2009 Aug 12. PubMed PMID: 19680997	2.215	1
EG 0308	Prof Des Richardson	2010	Saletta F, Suryo Rahmanto Y, Noulsri E, Richardson DR. Iron chelator-mediated alterations in gene expression: identification of novel iron-regulated molecules that are molecular targets of hypoxia-inducible factor-1 alpha and p53. <i>Mol Pharmacol.</i> 2010 Mar;77(3):443-58. Epub 2009 Dec 18. PubMed PMID: 20023006.	4.531	12
EG 0308	Prof Des Richardson	2010	Yao M, Taylor RA, Richards MG, Sved P, Wong J, Eisinger D, Xie C, Salomon R, Risbridger GP, Dong Q. Prostate-regenerating capacity of cultured human adult prostate epithelial cells. <i>Cells Tissues Organs.</i> 2010;191(3):203-12. Epub 2009 Sep 18. PubMed PMID: 19776547	3.322	2
EG 0409	Prof John EJ Rasko	2010	Tiffen JC, Bailey CG, Ng C, Rasko JE, Holst J. Luciferase expression and bioluminescence does not affect tumor cell growth in vitro or in vivo. <i>Mol Cancer.</i> 2010 Nov 22;9:299. PubMed PMID: 21092230; PubMed Central PMCID: PMC3002927	4.160	7
EG 0409	Prof John EJ Rasko	2011	Wang Q, Bailey CG, Ng C, Tiffen J, Thoeng A, Minhas V, Lehman ML, Hendy SC, Buchanan G, Nelson CC, Rasko JE, Holst J. Androgen receptor and nutrient signaling pathways coordinate the demand for increased amino acid transport during prostate cancer progression. <i>Cancer Res.</i> 2011 Dec 15;71(24):7525-36. Epub 2011 Oct 17. PubMed PMID: 22007000	7.543	1

# APPENDIX 2 PEER REVIEWED PUBLISHED PAPERS 2007-2011

Grant ID	Principal Investigator	Year Published	Publication Title	Impact Factor	Citation Index
PEER-REVIEWED PAPER & REVIEWS (CONTINUED)					
EG 0509	Prof Des Richardson	2011	Huang ML, Lane DJ, Richardson DR. Mitochondrial mayhem: the mitochondrion as a modulator of iron metabolism and its role in disease. <i>Antioxid Redox Signal</i> . 2011 Dec 15;15(12):3003-19. Epub 2011 May 5. Review. PubMed PMID: 21545274	8.456	0
EG 0509	Prof Des Richardson	2011	Kovacevic Z, Yu Y, Richardson DR. Chelators to the rescue: different horses for different courses! <i>Chem Res Toxicol</i> . 2011 Mar 21;24(3):279-82. Epub 2011 Jan 7. PubMed PMID: 21214214	3.740	0
EG 0509	Prof Des Richardson	2012	Kovacevic Z, Chikhani S, Lui GY, Sivagurunathan S, Richardson DR. The Iron-Regulated Metastasis Suppressor NDRG1 Targets NEDD4L, PTEN, and SMAD4 and Inhibits the PI3K and Ras Signaling Pathways. <i>Antioxid Redox Signal</i> . 2012 May 8. [Epub ahead of print] PubMed PMID: 22462	8.456	1
EG 0809	Prof Wayne Tilley	2011	Chiam K, Centenera MM, Butler LM, Tilley WD, Bianco-Miotto T. GSTP1 DNA methylation and expression status is indicative of 5-aza-2'-deoxycytidine efficacy in human prostate cancer cells. <i>PLoS One</i> . 2011;6(9):e25634. Epub 2011 Sep 28. PubMed PMID: 21980513; PubMed Central PMCID: PMC3182253	4.351	2
EG 0809	Prof Wayne Tilley	2012	Thompson VC, Day TK, Bianco-Miotto T, Selth LA, Han G, Thomas M, Buchanan G, Scher HI, Nelson CC; Australian Prostate Cancer BioResource, Greenberg NM, Butler LM, Tilley WD. A gene signature identified using a mouse model of androgen receptor-dependent prostate cancer predicts biochemical relapse in human disease. <i>Int J Cancer</i> . 2012 Aug 1;131(3):662-72. doi: 10.1002/ijc.26414. Epub 2012 Jan 24. PubMed PMID: 22275114	4.734	0
EG 0909	Prof Pamela Russell	2010	Reichert JC, Quent VM, Burke LJ, Stansfield SH, Clements JA, Hutmacher DW. Mineralized human primary osteoblast matrices as a model system to analyse interactions of prostate cancer cells with the bone microenvironment. <i>Biomaterials</i> . 2010 Nov;31(31):7928-36. Epub 2010 Aug 5. PubMed PMID: 20688384	7.365	9
EG 0909	Prof Pamela Russell	2010	Haddad AQ, Fleschner N, Nelson C, Saour B, Musquera M, Venkateswaran V, Klotz L. Antiproliferative mechanisms of the flavonoids 2,2'-dihydroxychalcone and fisetin in human prostate cancer cells. <i>Nutr Cancer</i> . 2010;62(5):668-81. PubMed PMID: 20574928	1.974	2
EG 0909	Prof Pamela Russell	2010	Sieh S, Lubik AA, Clements JA, Nelson CC, Hutmacher DW. Interactions between human osteoblasts and prostate cancer cells in a novel 3D in vitro model. <i>Organogenesis</i> . 2010 Jul-Sep;6(3):181-8. PubMed PMID: 21197221; PubMed Central PMCID: PMC2946051	2.17	2
EG 0909	Prof Pamela Russell	2010	Thompson VC, Hurtado-Coll A, Turbin D, Fazli L, Lehman ML, Gleave ME, Nelson CC. Relaxin drives Wnt signaling through upregulation of PCDHY in prostate cancer. <i>Prostate</i> . 2010 Jul 1;70(10):1134-45. PubMed PMID: 20503398	3.081	4
EG 0909	Prof Pamela Russell	2010	Lai J, Lehman ML, Dinger ME, Hendy SC, Mercer TR, Seim I, Lawrence MG, Mattick JS, Clements JA, Nelson CC. A variant of the KLK4 gene is expressed as a cis sense-antisense chimeric transcript in prostate cancer cells. <i>RNA</i> . 2010 Jun;16(6):1156-66. Epub 2010 Apr 20. PubMed PMID: 20406994; PubMed Central PMCID: PMC2874168	5.198	3
EG 0909	Prof Pamela Russell	2010	Zoubeidi A, Ettinger S, Beraldi E, Hadaschik B, Zardan A, Klomp LW, Nelson CC, Rennie PS, Gleave ME. Clusterin facilitates COMMD1 and I-kappaB degradation to enhance NF-kappaB activity in prostate cancer cells. <i>Mol Cancer Res</i> . 2010 Jan;8(1):119-30. Epub 2010 Jan 12. PubMed PMID: 20068069; PubMed Central PMCID: PMC2808437	4.162	15
EG 0909	Prof Pamela Russell	2010	Leon CG, Locke JA, Adomat HH, Etinger SL, Twiddy AL, Neumann RD, Nelson CC, Guns ES, Wasan KM. Alterations in cholesterol regulation contribute to the production of intratumoral androgens during progression to castration-resistant prostate cancer in a mouse xenograft model. <i>Prostate</i> . 2010 Mar 1;70(4):390-400. PubMed PMID: 19866465	3.081	21
EG 0909	Prof Pamela Russell	2010	Andrieu C, Taieb D, Baylot V, Ettinger S, Soubeyran P, De-Thonel A, Nelson C, Garrido C, So A, Fazli L, Bladou F, Gleave M, Iovanna JL, Rocchi P. Heat shock protein 27 confers resistance to androgen ablation and chemotherapy in prostate cancer cells through eIF4E. <i>Oncogene</i> . 2010 Apr 1;29(13):1883-96. Epub 2010 Jan 18. PubMed PMID: 20101233	7.135	23
EG 0909	Prof Pamela Russell	2010	Ricciardelli C, Bianco-Miotto T, Jindal S, Dodd TJ, Cohen PA, Marshall VR, Sutherland PD, Samaratunga H, Kench JG, Dong Y, Wang H, Clements JA, Risbridger GP, Sutherland RL, Tilley WD, Horsfall DJ; Australian Prostate Cancer BioResource. Comparative biomarker expression and RNA integrity in biospecimens derived from radical retropubic and robot-assisted laparoscopic prostatectomies. <i>Cancer Epidemiol Biomarkers Prev</i> . 2010 Jul;19(7):1755-65. PubMed PMID: 20615888	4.289	2
EG 0909	Prof Pamela Russell	2010	Hao J, Chen H, Madigan MC, Cozzi PJ, Beretov J, Xiao W, Delprado WJ, Russell PJ, Li Y. Co-expression of CD147 (EMMPRIN), CD44v3-10, MDR1 and monocarboxylate transporters is associated with prostate cancer drug resistance and progression. <i>Br J Cancer</i> . 2010 Sep 28;103(7):1008-18. Epub 2010 Aug 24. PubMed PMID: 20736947; PubMed Central PMCID: PMC2965856	5.042	11
EG 0909	Prof Pamela Russell	2010	Locke JA, Guns ES, Lehman ML, Ettinger S, Zoubeidi A, Lubik A, Margiotti K, Fazli L, Adomat H, Wasan KM, Gleave ME, Nelson CC. Arachidonic acid activation of intratumoral steroid synthesis during prostate cancer progression to castration resistance. <i>Prostate</i> . 2010 Feb 15;70(3):239-51. PubMed PMID: 19790237	3.081	6

Grant ID	Principal Investigator	Year Published	Publication Title	Impact Factor	Citation Index
PEER-REVIEWED PAPER & REVIEWS (CONTINUED)					
EG 0909	Prof Pamela Russell	2010	Bianco-Miotto T, Chiam K, Buchanan G, Jindal S, Day TK, Thomas M, Pickering MA, O'Loughlin MA, Ryan NK, Raymond WA, Horvath LG, Kench JG, Stricker PD, Marshall VR, Sutherland RL, Henshall SM, Gerald WL, Scher HI, Risbridger GP, Clements JA, Butler LM, Tilley WD, Horsfall DJ, Ricciardelli C; Australian Prostate Cancer BioResource. Global levels of specific histone modifications and an epigenetic gene signature predict prostate cancer progression and development. <i>Cancer Epidemiol Biomarkers Prev.</i> 2010 Oct;19(10):2611-22. Epub 2010 Sep 14. PubMed PMID: 20841388	4.289	10
EG 0909	Prof Pamela Russell	2011	Luk SU, Yap WN, Chiu YT, Lee DT, Ma S, Lee TK, Vasireddy RS, Wong YC, Ching YP, Nelson C, Yap YL, Ling MT. Gamma-tocotrienol as an effective agent in targeting prostate cancer stem cell-like population. <i>Int J Cancer.</i> 2011 May 1;128(9):2182-91. doi: 10.1002/ijc.25546. PubMed PMID: 20617516	4.722	6
EG 0909	Prof Pamela Russell	2011	Lubik AA, Gunter JH, Hendy SC, Locke JA, Adomat HH, Thompson V, Herington A, Gleave ME, Pollak M, Nelson CC. Insulin increases de novo steroidogenesis in prostate cancer cells. <i>Cancer Res.</i> 2011 Sep 1;71(17):5754-64. Epub 2011 Jul 11. PubMed PMID: 21747118	7.543	9
EG 0210	Prof Ian Davis	2012	Klein O, Ebert LM, Zanker D, Woods K, Tan BS, Fucikova J, Behren A, Davis ID, Maraskovsky E, Chen W, Cebon J. Flt3 ligand expands CD4(+) FoxP3(+) regulatory T cells in human subjects. <i>Eur J Immunol.</i> 2012 Nov 2. doi: 10.1002/eji.201242603. [Epub ahead of print] PubMed PMID: 23124877	5.179	0
EG 0210	Prof Ian Davis	2012	Ebert LM, Macraill SE, Zanker D, Davis ID, Cebon J, Chen W. A Cancer Vaccine Induces Expansion of NY-ESO-1-Specific Regulatory T Cells in Patients with Advanced Melanoma. <i>PLoS One.</i> 2012;7(10):e48424. doi: 10.1371/journal.pone.0048424. Epub 2012 Oct 26. PubMed PMID: 23110239; PubMed Central PMCID: PMC3482213	4.351	0
EG 0310	A/Prof John Hooper	2012	Wilkinson R, Woods K, D'Rozario R, Prue R, Vari F, Hardy MY, Dong Y, Clements JA, Hart DN, Radford KJ. Human kallikrein 4 signal peptide induces cytotoxic T cell responses in healthy donors and prostate cancer patients. <i>Cancer Immunol Immunother.</i> 2012 Feb;61(2):169-79. Epub 2011 Aug 27. PubMed PMID: 21874303	3.791	1
EG 0410	Prof Des Richardson	2011	Tang L, Yao S, Till C, Goodman PJ, Tangen CM, Wu Y, Kristal AR, Platz EA, Neuhaus ML, Stanczyk FZ, Reichardt JK, Santella RM, Hsing A, Hoque A, Lippman SM, Thompson IM, Ambrosone CB. Repeat polymorphisms in estrogen metabolism genes and prostate cancer risk: results from the Prostate Cancer Prevention Trial. <i>Carcinogenesis.</i> 2011 Oct;32(10):1500-6. Epub 2011 Jul 18. PubMed PMID: 21771722; PubMed Central PMCID: PMC3179424	4.795	0
EG 0410	Prof Des Richardson	2011	Yao S, Till C, Kristal AR, Goodman PJ, Hsing AW, Tangen CM, Platz EA, Stanczyk FZ, Reichardt JK, Tang L, Neuhaus ML, Santella RM, Figg WD, Price DK, Parnes HL, Lippman SM, Thompson IM, Ambrosone CB, Hoque A. Serum estrogen levels and prostate cancer risk in the prostate cancer prevention trial: a nested case-control study. <i>Cancer Causes Control.</i> 2011 Aug;22(8):1121-31. Epub 2011 Jun 11. PubMed PMID: 21667068; PubMed Central PMCID: PMC3139891	2.877	3
EG 0410	Prof Des Richardson	2011	Yu Y, Suryo Rahmanto Y, Hawkins CL, Richardson DR. The potent and novel thiosemicarbazone chelators di-2-pyridylketone-4,4-dimethyl-3-thiosemicarbazone and 2-benzoylpyridine-4,4-dimethyl-3-thiosemicarbazone affect crucial thiol systems required for ribonucleotide reductase activity. <i>Mol Pharmacol.</i> 2011 Jun;79(6):921-31. Epub 2011 Mar 9. PubMed PMID: 21389104	5.328	6
EG 0410	Prof Des Richardson	2011	Kovacevic Z, Sivagurunathan S, Mangs H, Chikhani S, Zhang D, Richardson DR. The metastasis suppressor, N-myc downstream regulated gene 1 (NDRG1), upregulates p21 via p53-independent mechanisms. <i>Carcinogenesis.</i> 2011 May;32(5):732-40. Epub 2011 Mar 11. PubMed PMID: 21398495	4.795	9
EG 0410	Prof Des Richardson	2011	Assinder S, Cole N. Does TGF- $\beta$ induced formation of actin stress fibres reinforce Smad dependent TGF- $\beta$ signalling in the prostate? <i>Med Hypotheses.</i> 2011 Jun;76(6):802-4. Epub 2011 Mar 21. PubMed PMID: 21421289	1.393	1
EG 0410	Prof Des Richardson	2012	Yao M, Xie C, Constantine M, Hua S, Hambly BD, Jardine G, Sved P, Dong Q. How can food extracts consumed in the Mediterranean and East Asia suppress prostate cancer proliferation? <i>Br J Nutr.</i> 2012 Aug;108(3):424-30. doi: 10.1017/S0007114511005770. Epub 2011 Nov 9. PubMed PMID: 22067725	3.013	0
EG 0410	Prof Des Richardson	2012	Yu Y, Suryo Rahmanto Y, Richardson DR. Bp44mT: an orally active iron chelator of the thiosemicarbazone class with potent anti-tumour efficacy. <i>Br J Pharmacol.</i> 2012 Jan;165(1):148-66. doi: 10.1111/j.1476-5381.2011.01526.x. PubMed PMID: 21658021; PubMed Central PMCID: PMC3252974.	4.409	1
EG 0510	A/Prof Noel Whitaker	2012	Whitaker NJ, Glenn WK, Sahrudin A, Orde MM, Delprado W, Lawson JS. Human papillomavirus and Epstein Barr virus in prostate cancer: Koilocytes indicate potential oncogenic influences of human papillomavirus in prostate cancer. <i>Prostate.</i> 2012 Jul 31. doi: 10.1002/pros.22562. [Epub ahead of print] PubMed PMID: 22851253	3.081	0
EG 0710/0810	Prof Robert Newton	2011	Galvão DA, Taaffe DR, Cormie P, Spry N, Chambers SK, Peddle-McIntyre C, Baker M, Denham J, Joseph D, Groom G, Newton RU. Efficacy and safety of a modular multi-modal exercise program in prostate cancer patients with bone metastases: a randomized controlled trial. <i>BMC Cancer.</i> 2011 Dec 13;11:517. PubMed PMID: 22166044; PubMed Central PMCID: PMC3267706	2.736	0
EG 0910	Dr Ora Bernard	2011	Suryadinata R, Sadowski M, Steel R, Sarcevic B. Cyclin-dependent kinase-mediated phosphorylation of RBP1 and pRb promotes their dissociation to mediate release of the SAP30-mSin3-HDAC transcriptional repressor complex. <i>J Biol Chem.</i> 2011 Feb 18;286(7):5108-18. Epub 2010 Dec 9. PubMed PMID: 21148318; PubMed Central PMCID: PMC3037622	5.328	1

# APPENDIX 2 PEER REVIEWED PUBLISHED PAPERS 2007-2011

Grant ID	Principal Investigator	Year Published	Publication Title	Impact Factor	Citation Index
PEER-REVIEWED PAPER & REVIEWS (CONTINUED)					
EG 0910	Dr Ora Bernard	2011	Green MF, Scott JW, Steel R, Oakhill JS, Kemp BE, Means AR. Ca2+/Calmodulin-dependent protein kinase kinase beta is regulated by multisite phosphorylation. <i>J Biol Chem</i> . 2011 Aug 12;286(32):28066-79. Epub 2011 Jun 13. PubMed PMID: 21669867; PubMed Central PMCID: PMC3151052	5.328	1
EG 0910	Dr Ora Bernard	2011	Oakhill JS, Steel R, Chen ZP, Scott JW, Ling N, Tam S, Kemp BE. AMPK is a direct adenylate charge-regulated protein kinase. <i>Science</i> . 2011 Jun 17;332(6036):1433-5. PubMed PMID: 21680840	29.747	37
EG 0910	Dr Ora Bernard	2012	Hawley SA, Fullerton MD, Ross FA, Schertzer JD, Chevtzoff C, Walker KJ, Pegg MW, Zibrova D, Green KA, Mustard KJ, Kemp BE, Sakamoto K, Steinberg GR, Hardie DG. The ancient drug salicylate directly activates AMP-activated protein kinase. <i>Science</i> . 2012 May 18;336(6083):918-22. Epub 2012 Apr 19. PubMed PMID: 22517326; PubMed Central PMCID: PMC3399766	29.747	5
CA 497244	Prof Colleen Nelson	2008	Telesca D, Inoue LY, Neira M, Etzioni R, Gleave M, Nelson C. Differential expression and network inferences through functional data modeling. <i>Biometrics</i> . 2009 Sep;65(3):793-804. Epub 2008 Nov 13. PubMed PMID: 19053995; PubMed Central PMCID: PMC2956129	1.867	2
CA 497244	Prof Colleen Nelson	2009	Snoek R, Cheng H, Margiotti K, Wafa LA, Wong CA, Wong EC, Fazli L, Nelson CC, Gleave ME, Rennie PS. In vivo knockdown of the androgen receptor results in growth inhibition and regression of well-established, castration-resistant prostate tumors. <i>Clin Cancer Res</i> . 2009 Jan 1;15(1):39-47. PubMed PMID: 19118031	6.747	32
CA 497244	Prof Colleen Nelson	2011	Wang Q, Bailey CG, Ng C, Tiffen J, Thoeng A, Minhas V, Lehman ML, Hendy SC, Buchanan G, Nelson CC, Rasko JE, Holst J. Androgen receptor and nutrient signaling pathways coordinate the demand for increased amino acid transport during prostate cancer progression. <i>Cancer Res</i> . 2011 Dec 15;71(24):7525-36. Epub 2011 Oct 17. PubMed PMID: 22007000	7.543	1
CA 497244	Prof Colleen Nelson	2011	Shiota M, Zoubeidi A, Kumano M, Beraldi E, Naito S, Nelson CC, Sorensen PH, Gleave ME. Clusterin is a critical downstream mediator of stress-induced YB-1 transactivation in prostate cancer. <i>Mol Cancer Res</i> . 2011 Dec;9(12):1755-66. Epub 2011 Oct 10. PubMed PMID: 21987172	4.162	1
CA 497244	Prof Colleen Nelson	2012	Thompson VC, Day TK, Bianco-Miotto T, Selth LA, Han G, Thomas M, Buchanan G, Scher HI, Nelson CC; Australian Prostate Cancer BioResource, Greenberg NM, Butler LM, Tilley WD. A gene signature identified using a mouse model of androgen receptor-dependent prostate cancer predicts biochemical relapse in human disease. <i>Int J Cancer</i> . 2012 Aug 1;131(3):662-72. doi: 10.1002/ijc.26414. Epub 2012 Jan 24. PubMed PMID: 22275114	4.734	0
CA 510239	Prof Pamela Russell	2007	Tang M, Russell PJ, Khatri A. Magnetic nanoparticles: prospects in cancer imaging and therapy. <i>Discov Med</i> . 2007 Jun;7(38):68-74. PubMed PMID: 18093468	N/A	2
CA 510239	Prof Pamela Russell	2009	Thierry B, Al-Ejeh F, Khatri A, Yuan Z, Russell PJ, Ping S, Brown MP, Majewski P. Multifunctional core-shell magnetic cisplatin nanocarriers. <i>Chem Commun (Camb)</i> . 2009 Dec 21;(47):7348-50. Epub 2009 Nov 3. PubMed PMID: 20024224.	6.169	5
CA 510239	Prof Pamela Russell	2010	Tang C, Russell PJ, Martiniello-Wilks R, Rasko JE, Khatri A. Concise review: Nanoparticles and cellular carriers-allies in cancer imaging and cellular gene therapy? <i>Stem Cells</i> . 2010 Sep;28(9):1686-702. Review. PubMed PMID: 20629172; PubMed Central PMCID: PMC2996089	7.747	13
BRP 06	Prof Robert Newton	2008	Newton RU, Galvão DA. Exercise in prevention and management of cancer. <i>Curr Treat Options Oncol</i> . 2008 Jun;9(2-3):135-46. Epub 2008 Aug 13. Review. PubMed PMID: 18704691	2.684	23
BRP 06	Prof Robert Newton	2008	Galvão DA, Newton RU, Taaffe DR, Spry N. Can exercise ameliorate the increased risk of cardiovascular disease and diabetes associated with ADT? <i>Nat Clin Pract Urol</i> . 2008 Jun;5(6):306-7. Epub 2008 Apr 22. Review. PubMed PMID: 18431358	2.615	8
BRP 06	Prof Robert Newton	2011	Galvão DA, Taaffe DR, Spry N, Joseph D, Newton RU. Acute versus chronic exposure to androgen suppression for prostate cancer: impact on the exercise response. <i>J Urol</i> . 2011 Oct;186(4):1291-7. Epub 2011 Aug 17. PubMed PMID: 21849187	4.016	1
PR 0207	Prof Dietmar Huttmacher	2009	Huttmacher DW, Horch RE, Loessner D, Rizzi S, Sieh S, Reichert JC, Clements JA, Beier JP, Arkudas A, Bleiziffer O, Kneser U. Translating tissue engineering technology platforms into cancer research. <i>J Cell Mol Med</i> . 2009 Aug;13(8A):1417-27. Epub 2009 Jul 20. Review. PubMed PMID: 19627398.	5.228	33
PR 0207	Prof Dietmar Huttmacher	2010	Quent VM, Loessner D, Friis T, Reichert JC, Huttmacher DW. Discrepancies between metabolic activity and DNA content as tool to assess cell proliferation in cancer research. <i>J Cell Mol Med</i> . 2010 Apr;14(4):1003-13. Epub 2010 Jan 15. PubMed PMID: 20082656	5.228	6
PR 0207	Prof Dietmar Huttmacher	2010	Huttmacher DW, Loessner D, Rizzi S, Kaplan DL, Mooney DJ, Clements JA. Can tissue engineering concepts advance tumor biology research? <i>Trends Biotechnol</i> . 2010 Mar;28(3):125-33. Epub 2010 Jan 6. Review. PubMed PMID: 20056286	6.069	17
PR 0207	Prof Dietmar Huttmacher	2010	Huttmacher DW. Biomaterials offer cancer research the third dimension. <i>Nat Mater</i> . 2010 Feb;9(2):90-3. PubMed PMID: 20094076	32.841	20
PR 0207	Prof Dietmar Huttmacher	2010	Sieh S, Lubik AA, Clements JA, Nelson CC, Huttmacher DW. Interactions between human osteoblasts and prostate cancer cells in a novel 3D in vitro model. <i>Organogenesis</i> . 2010 Jul-Sep;6(3):181-8. PubMed PMID: 21197221; PubMed Central PMCID: PMC2946051	2.17	2

Grant ID	Principal Investigator	Year Published	Publication Title	Impact Factor	Citation Index
PEER-REVIEWED PAPER & REVIEWS (CONTINUED)					
PR 0407	Dr Gillian Mitchell	2008	Mitra A, Fisher C, Foster CS, Jameson C, Barbachanno Y, Bartlett J, Bancroft E, Doherty R, Kote-Jarai Z, Peock S, Easton D; IMPACT and EMBRACE Collaborators, Eeles R. Prostate cancer in male BRCA1 and BRCA2 mutation carriers has a more aggressive phenotype. <i>Br J Cancer</i> . 2008 Jan 29;98(2):502-7. Epub 2008 Jan 8. PubMed PMID: 18182994; PubMed Central PMCID: PMC2361443	5.042	35
PR 0907	Dr Jonathan Harris	2009	Swedberg JE, Nigon LV, Reid JC, de Veer SJ, Walpole CM, Stephens CR, Walsh TP, Takayama TK, Hooper JD, Clements JA, Buckle AM, Harris JM. Substrate-guided design of a potent and selective kallikrein-related peptidase inhibitor for kallikrein 4. <i>Chem Biol</i> . 2009 Jun 26;16(6):633-43. PubMed PMID: 19549601	6.523	20
PR 0907	Dr Jonathan Harris	2010	Swedberg JE, de Veer SJ, Harris JM. Natural and engineered kallikrein inhibitors: an emerging pharmacopoeia. <i>Biol Chem</i> . 2010 Apr;391(4):357-74. Review. PubMed PMID: 20180638	2.732	9
PR 0907	Dr Jonathan Harris	2011	Swedberg JE, de Veer SJ, Sit KC, Reboul CF, Buckle AM, Harris JM. Mastering the canonical loop of serine protease inhibitors: enhancing potency by optimising the internal hydrogen bond network. <i>PLoS One</i> . 2011 Apr 27;6(4):e19302. PubMed PMID: 21556330; PubMed Central PMCID: PMC3083445	4.351	6
PR 0907	Dr Jonathan Harris	2012	Sanchez WY, de Veer SJ, Swedberg JE, Hong EJ, Reid JC, Walsh TP, Hooper JD, Hammond GL, Clements JA, Harris JM. Selective cleavage of human sex hormone-binding globulin by kallikrein-related peptidases and effects on androgen action in LNCaP prostate cancer cells. <i>Endocrinology</i> . 2012 Jul;153(7):3179-89. Epub 2012 Apr 30. PubMed PMID: 22547569	4.752	0
PR 1307	A/Prof Kristen Radford	2009	Hardy MY, Kassianos AJ, Vulink A, Wilkinson R, Jongbloed SL, Hart DN, Radford KJ. NK cells enhance the induction of CTL responses by IL-15 monocyte-derived dendritic cells. <i>Immunol Cell Biol</i> . 2009 Nov-Dec;87(8):606-14. Epub 2009 Jun 23. PubMed PMID: 19546878	4.200	5
PR 1307	A/Prof Kristen Radford	2009	Wilson J, Cullup H, Lourie R, Sheng Y, Palkova A, Radford KJ, Dickinson AM, Rice AM, Hart DN, Munster DJ. Antibody to the dendritic cell surface activation antigen CD83 prevents acute graft-versus-host disease. <i>J Exp Med</i> . 2009 Feb 16;206(2):387-98. Epub 2009 Jan 26. Erratum in: <i>J Exp Med</i> . 2009 May 11;206(5):1203. PubMed PMID: 19171763; PubMed Central PMCID: PMC2646577	14.505	15
PR 1307	A/Prof Kristen Radford	2010	Kassianos AJ, Jongbloed SL, Hart DN, Radford KJ. Isolation of human blood DC subtypes. <i>Methods Mol Biol</i> . 2010;595:45-54. PubMed PMID: 19941104	1.29	0
PR 1307	A/Prof Kristen Radford	2012	Wilkinson R, Woods K, D'Rozario R, Prue R, Vari F, Hardy MY, Dong Y, Clements JA, Hart DN, Radford KJ. Human kallikrein 4 signal peptide induces cytotoxic T cell responses in healthy donors and prostate cancer patients. <i>Cancer Immunol Immunother</i> . 2012 Feb;61(2):169-79. Epub 2011 Aug 27. PubMed PMID: 21874303	3.791	1
PR 1907	Prof Samuel Breit	2009	Wakchoure S, Swain TM, Hentunen TA, Bauskin AR, Brown DA, Breit SN, Vuopala KS, Harris KW, Selander KS. Expression of macrophage inhibitory cytokine-1 in prostate cancer bone metastases induces osteoclast activation and weight loss. <i>Prostate</i> . 2009 May 1;69(6):652-61. PubMed PMID: 19152406	3.081	12
PR 1907	Prof Samuel Breit	2009	Brown DA, Lindmark F, Stattin P, Bälter K, Adami HO, Zheng SL, Xu J, Isaacs WB, Grönberg H, Breit SN, Wiklund FE. Macrophage inhibitory cytokine 1: a new prognostic marker in prostate cancer. <i>Clin Cancer Res</i> . 2009 Nov 1;15(21):6658-64. Epub 2009 Oct 20. PubMed PMID: 19843661	6.747	13
PR 3607	A/Prof Andrew Brown	2008	McCarthy FR, Brown AJ. Autonomous Hedgehog signalling is undetectable in PC-3 prostate cancer cells. <i>Biochem Biophys Res Commun</i> . 2008 Aug 15;373(1):109-12. Epub 2008 Jun 9. PubMed PMID: 18544338	2.484	7
PR 3607	A/Prof Andrew Brown	2008	Gill S, Chow R, Brown AJ. Sterol regulators of cholesterol homeostasis and beyond: the oxysterol hypothesis revisited and revised. <i>Prog Lipid Res</i> . 2008 Nov;47(6):391-404. Epub 2008 May 6. Review. PubMed PMID: 18502209	8.167	58
PR 3607	A/Prof Andrew Brown	2008	Sharpe LJ, Brown AJ. Rapamycin down-regulates LDL-receptor expression independently of SREBP-2. <i>Biochem Biophys Res Commun</i> . 2008 Sep 5;373(4):670-4. Epub 2008 Jul 9. PubMed PMID: 18602894	2.484	16
PR 3607	A/Prof Andrew Brown	2008	Kristiana I, Yang H, Brown AJ. Different kinetics of cholesterol delivery to components of the cholesterol homeostatic machinery: implications for cholesterol trafficking to the endoplasmic reticulum. <i>Biochim Biophys Acta</i> . 2008 Nov-Dec;1781(11-12):724-30. Epub 2008 Sep 17. PubMed PMID: 18838129	5	8
PR 3607	A/Prof Andrew Brown	2009	Galea AM, Brown AJ. Special relationship between sterols and oxygen: were sterols an adaptation to aerobic life? <i>Free Radic Biol Med</i> . 2009 Sep 15;47(6):880-9. Epub 2009 Jun 25. Review. PubMed PMID: 19559787	6.081	12
PR 3607	A/Prof Andrew Brown	2009	Kristiana I, Sharpe LJ, Catts VS, Lutze-Mann LH, Brown AJ. Antipsychotic drugs upregulate lipogenic gene expression by disrupting intracellular trafficking of lipoprotein-derived cholesterol. <i>Pharmacogenomics J</i> . 2010 Oct;10(5):396-407. Epub 2009 Dec 8. PubMed PMID: 19997082	4.398	2
PR 3607	A/Prof Andrew Brown	2009	Krycer JR, Brown AJ. Putative fat fighter hits the middle man. <i>Chem Biol</i> . 2009 Aug 28;16(8):798-800. PubMed PMID: 19716469	6.523	1



# APPENDIX 2

## PEER REVIEWED PUBLISHED PAPERS 2007-2011

Grant ID	Principal Investigator	Year Published	Publication Title	Impact Factor	Citation Index
PEER-REVIEWED PAPER & REVIEWS (CONTINUED)					
PR 3607	A/Prof Andrew Brown	2009	Brown AJ. 24(S),25-epoxycholesterol: a messenger for cholesterol homeostasis. <i>Int J Biochem Cell Biol.</i> 2009 Apr;41(4):744-7. Epub 2008 Aug 3. Review. PubMed PMID: 18725318	4.887	7
PR 3607	A/Prof Andrew Brown	2009	Krycer JR, Kristiana I, Brown AJ. Cholesterol homeostasis in two commonly used human prostate cancer cell-lines, LNCaP and PC-3. <i>PLoS One.</i> 2009 Dec 30;4(12):e8496. PubMed PMID: 20041144; PubMed Central PMCID: PMC2794383	4.351	12
PR 3607	A/Prof Andrew Brown	2010	Krycer JR, Sharpe LJ, Luu W, Brown AJ. The Akt-SREBP nexus: cell signaling meets lipid metabolism. <i>Trends Endocrinol Metab.</i> 2010 May;21(5):268-76. Epub 2010 Feb 1. Review. PubMed PMID: 20117946	6.562	0
PR 3707	Dr Rosetta Martiniello-Wilks	2010	Tang C, Russell PJ, Martiniello-Wilks R, Rasko JE, Khatri A. Concise review: Nanoparticles and cellular carriers-allies in cancer imaging and cellular gene therapy? <i>Stem Cells.</i> 2010 Sep;28(9):1686-702. Review. PubMed PMID: 20629172; PubMed Central PMCID: PMC2996089	7.747	13
PG 0508	Prof John Mills	2012	Mills J, Oliver A, Sherwin JC, Frydenberg M, Peters JS, Costello A, Harewood L, Love C, Redgrave N, van Golen KL, Bailey M, Pedersen J. Utility of RhoC and ZAG protein expression as biomarkers for prediction of PSA failure following radical prostatectomy for high grade prostate cancer. <i>Pathology.</i> 2012 Oct;44(6):513-518. PubMed PMID: 22935975	2.673	0
PG 0708	A/Prof Amanda Spurdle	2009	Eeles RA, Kote-Jarai Z, Al Olama AA, Giles GG, Guy M, Severi G, Muir K, Hopper JL, Henderson BE, Haiman CA, Schleutker J, Hamdy FC, Neal DE, Donovan JL, Stanford JL, Ostrander EA, Ingles SA, John EM, Thibodeau SN, Schaid D, Park JY, Spurdle A, Clements J, Dickinson JL, Maier C, Vogel W, Dörk T, Rebbeck TR, Cooney KA, Cannon-Albright L, Chappuis PO, Hutter P, Zeegers M, Kaneva R, Zhang HW, Lu YJ, Foulkes WD, English DR, Leongamornlert DA, Tymrakiewicz M, Morrison J, Ardern-Jones AT, Hall AL, O'Brien LT, Wilkinson RA, Saunders EJ, Page EC, Sawyer EJ, Edwards SM, Dearnaley DP, Horwich A, Huddart RA, Khoo VS, Parker CC, Van As N, Woodhouse CJ, Thompson A, Christmas T, Ogden C, Cooper CS, Southey MC, Lophatananon A, Liu JF, Kolonel LN, Le Marchand L, Wahlfors T, Tammela TL, Auvinen A, Lewis SJ, Cox A, FitzGerald LM, Koopmeiners JS, Karyadi DM, Kwon EM, Stern MC, Corral R, Joshi AD, Shahabi A, McDonnell SK, Sellers TA, Pow-Sang J, Chambers S, Aitken J, Gardiner RA, Batra J, Kedda MA, Lose F, Polanowski A, Patterson B, Serth J, Meyer A, Luedeke M, Stefflova K, Ray AM, Lange EM, Farnham J, Khan H, Slavov C, Mitkova A, Cao G; UK Genetic Prostate Cancer Study Collaborators/British Association of Urological Surgeons' Section of Oncology; UK ProtecT Study Collaborators; PRACTICAL Consortium, Easton DF. Identification of seven new prostate cancer susceptibility loci through a genome-wide association study. <i>Nat Genet.</i> 2009 Oct;41(10):1116-21. Epub 2009 Sep 20. PubMed PMID: 19767753; PubMed Central PMCID: PMC2846760	34.284	128
PG 0708	A/Prof Amanda Spurdle	2011	Lose F, Batra J, O'Mara T, Fahey P, Marquart L, Eeles RA, Easton DF, Al Olama AA, Kote-Jarai Z, Guy M, Muir K, Lophatananon A, Rahman AA, Neal DE, Hamdy FC, Donovan JL, Chambers S, Gardiner RA, Aitken JF, Yaxley J, Alexander K, Clements JA, Spurdle AB, Kedda MA; Australian Prostate Cancer BioResource. Common variation in Kallikrein genes KLK5, KLK6, KLK12, and KLK13 and risk of prostate cancer and tumor aggressiveness. <i>Urol Oncol.</i> 2011 Jul 7. [Epub ahead of print] PubMed PMID: 21741862	3.216	0
PG 0708	A/Prof Amanda Spurdle	2011	Batra J, Lose F, O'Mara T, Marquart L, Stephens C, Alexander K, Srinivasan S, Eeles RA, Easton DF, Al Olama AA, Kote-Jarai Z, Guy M, Muir K, Lophatananon A, Rahman AA, Neal DE, Hamdy FC, Donovan JL, Chambers S, Gardiner RA, Aitken J, Yaxley J, Kedda MA, Clements JA, Spurdle AB. Association between Prostateinogen (KLK15) genetic variants and prostate cancer risk and aggressiveness in Australia and a meta-analysis of GWAS data. <i>PLoS One.</i> 2011;6(11):e26527. Epub 2011 Nov 23. PubMed PMID: 22132073; PubMed Central PMCID: PMC3223160	4.351	0
PG 0708	A/Prof Amanda Spurdle	2011	Batra J, Lose F, Chambers S, Gardiner RA, Aitken J, Yaxley J, Clements JA, Spurdle AB; Australian Prostate Cancer BioResource. A replication study examining novel common single nucleotide polymorphisms identified through a prostate cancer genome-wide association study in a Japanese population. <i>Am J Epidemiol.</i> 2011 Dec 15;174(12):1391-5. Epub 2011 Nov 15. PubMed PMID: 22085625	5.589	0
PG 3508	Prof Robert ('Frank') Gardiner	2011	Roberts MJ, Schirra HJ, Lavin MF, Gardiner RA. Metabolomics: a novel approach to early and noninvasive prostate cancer detection. <i>Korean J Urol.</i> 2011 Feb;52(2):79-89. Epub 2011 Feb 19. PubMed PMID: 21379423; PubMed Central PMCID: PMC3045724	N/A	3
PG 0709	Prof Gail Risbridger	2010	Taylor RA, Toivanen R, Risbridger GP. Stem cells in prostate cancer: treating the root of the problem. <i>Endocr Relat Cancer.</i> 2010 Sep 23;17(4):R273-85. Print 2010 Dec. Review. PubMed PMID: 20660571	4.282	2
PG 0709	Prof Gail Risbridger	2010	Risbridger GP, Davis ID, Birrell SN, Tilley WD. Breast and prostate cancer: more similar than different. <i>Nat Rev Cancer.</i> 2010 Mar;10(3):205-12. Epub 2010 Feb 11. Review. PubMed PMID: 20147902	29.538	23
PG 0709	Prof Gail Risbridger	2010	McPherson SJ, Hussain S, Balanathan P, Hedwards SL, Niranjana B, Grant M, Chandrasiri UP, Toivanen R, Wang Y, Taylor RA, Risbridger GP. Estrogen receptor-beta activated apoptosis in benign hyperplasia and cancer of the prostate is androgen independent and TNFalpha mediated. <i>Proc Natl Acad Sci U S A.</i> 2010 Feb 16;107(7):3123-8. Epub 2010 Feb 1. PubMed PMID: 20133657; PubMed Central PMCID: PMC2840300	9.432	25
PG 0709	Prof Gail Risbridger	2011	Risbridger GP, Taylor RA. The complexities of identifying a cell of origin for human prostate cancer. <i>Asian J Androl.</i> 2011 Jan;13(1):118-9. Epub 2010 Oct 18. PubMed PMID: 20953202	1.688	0

Grant ID	Principal Investigator	Year Published	Publication Title	Impact Factor	Citation Index
PEER-REVIEWED PAPER & REVIEWS (CONTINUED)					
PG 0709	Prof Gail Risbridger	2012	Hussain S, Lawrence MG, Taylor RA, Lo CY; APC BioResource, Frydenberg M, Ellem SJ, Furic L, Risbridger GP. Estrogen receptor $\beta$ activation impairs prostatic regeneration by inducing apoptosis in murine and human stem/progenitor enriched cell populations. PLoS One. 2012;7(7):e40732. Epub 2012 Jul 10. PubMed PMID: 22808245; PubMed Central PMCID: PMC3393688	4.351	0
PG 1009	A/Prof Ygal Haupt	2011	Cater MA, Haupt Y. Clotroquinol induces cytoplasmic clearance of the X-linked inhibitor of apoptosis protein (XIAP): therapeutic indication for prostate cancer. Biochem J. 2011 Jun 1;436(2):481-91. Erratum in: Biochem J. 2011 Aug 1;437(3):575. PubMed PMID: 21426304	5.155	1
PG 2709	A/Prof Gianluca Severi	2010	Severi G, Shannon BA, Hoang HN, Baglietto L, English DR, Hopper JL, Pedersen J, Southey MC, Sinclair R, Cohen RJ, Giles GG. Plasma concentration of Propionibacterium acnes antibodies and prostate cancer risk: results from an Australian population-based case-control study. Br J Cancer. 2010 Jul 27;103(3):411-5. Epub 2010 Jul 6. PubMed PMID: 20606679; PubMed Central PMCID: PMC2920014	5.042	1
ARC PTNG 0110	A/Prof Patricia Livingston	2011	Livingston PM, Salmon J, Courneya KS, Gaskin CJ, Craike M, Botti M, Broadbent S, Kent B. Efficacy of a referral and physical activity program for survivors of prostate cancer [ENGAGE]: rationale and design for a cluster randomised controlled trial. BMC Cancer. 2011 Jun 13;11:237. PubMed PMID: 21663698; PubMed Central PMCID: PMC3141765	2.736	2
PG 2210	Dr Grant Buchanan	2012	Lawrence MG, Stephens CR, Need EF, Lai J, Buchanan G, Clements JA. Long terminal repeats act as androgen-responsive enhancers for the PSA-kallikrein locus. Endocrinology. 2012 Jul;153(7):3199-210. Epub 2012 May 17. PubMed PMID: 22597536	4.752	0
PG 2210	Dr Grant Buchanan	2012	Chiam K, Ryan NK, Ricciardelli C, Day TK, Buchanan G, Ochnik AM, Murti K, Selth LA; Australian Prostate Cancer BioResource, Butler LM, Tilley WD, Bianco-Miotto T. Characterization of the prostate cancer susceptibility gene KLF6 in human and mouse prostate cancers. Prostate. 2012 Jul 10. doi: 10.1002/pros.22554. [Epub ahead of print] PubMed PMID: 22782870	3.081	0
PG 2710	A/Prof Andrew Brown	2011	Krycer JR, Brown AJ. Cross-talk between the androgen receptor and the liver X receptor: implications for cholesterol homeostasis. J Biol Chem. 2011 Jun 10;286(23):20637-47. Epub 2011 Apr 13. PubMed PMID: 21489984; PubMed Central PMCID: PMC3121513	5.328	7
PG 3510	Prof Peter Leedman	2011	Epis MR, Barker A, Giles KM, Beveridge DJ, Leedman PJ. The RNA-binding protein HuR opposes the repression of ERBB-2 gene expression by microRNA miR-331-3p in prostate cancer cells. J Biol Chem. 2011 Dec 2;286(48):41442-54. Epub 2011 Oct 4. PubMed PMID: 21971048; PubMed Central PMCID: PMC3308856	5.328	2
PG 4310	Prof Susan Clark	2012	Valdés-Mora F, Song JZ, Statham AL, Strbenac D, Robinson MD, Nair SS, Patterson KI, Tremethick DJ, Stirzaker C, Clark SJ. Acetylation of H2A.Z is a key epigenetic modification associated with gene deregulation and epigenetic remodeling in cancer. Genome Res. 2012 Feb;22(2):307-21. Epub 2011 Jul 25. PubMed PMID: 21788347; PubMed Central PMCID: PMC3266038	11.342	3
YI 0107	Dr Renea Taylor	2008	Taylor RA, Risbridger GP. The path toward identifying prostatic stem cells. Differentiation. 2008 Jul;76(6):671-81. Review. PubMed PMID: 18752495	3.745	5
YI 0107	Dr Renea Taylor	2008	Taylor RA, Risbridger GP. Prostatic tumor stroma: a key player in cancer progression. Curr Cancer Drug Targets. 2008 Sep;8(6):490-7. Review. PubMed PMID: 18781895	5.677	23
YI 0107	Dr Renea Taylor	2008	Risbridger GP, Taylor RA. Minireview: regulation of prostatic stem cells by stromal niche in health and disease. Endocrinology. 2008 Sep;149(9):4303-6. Epub 2008 Jun 5. Review. PubMed PMID: 18535102	4.752	12
YI 0107	Dr Renea Taylor	2009	Taylor RA, Wang H, Wilkinson SE, Richards MG, Britt KL, Vaillant F, Lindeman GJ, Visvader JE, Cunha GR, St John J, Risbridger GP. Lineage enforcement by inductive mesenchyme on adult epithelial stem cells across developmental germ layers. Stem Cells. 2009 Dec;27(12):3032-42. PubMed PMID: 19862839	7.747	7
YI 0107	Dr Renea Taylor	2009	Yao M, Taylor RA, Richards MG, Sved P, Wong J, Eisinger D, Xie C, Salomon R, Risbridger GP, Dong Q. Prostate-regenerating capacity of cultured human adult prostate epithelial cells. Cells Tissues Organs. 2010;191(3):203-12. Epub 2009 Sep 18. PubMed PMID: 19776547	3.322	2
YI 0107	Dr Renea Taylor	2010	Risbridger GP, Taylor RA. The complexities of identifying a cell of origin for human prostate cancer. Asian J Androl. 2011 Jan;13(1):118-9. Epub 2010 Oct 18. PubMed PMID: 20953202	1.688	0
YI 0107	Dr Renea Taylor	2010	McPherson SJ, Hussain S, Balanathan P, Hedwards SL, Niranjana B, Grant M, Chandrasiri UP, Toivanen R, Wang Y, Taylor RA, Risbridger GP. Estrogen receptor-beta activated apoptosis in benign hyperplasia and cancer of the prostate is androgen independent and TNFalpha mediated. Proc Natl Acad Sci U S A. 2010 Feb 16;107(7):3123-8. Epub 2010 Feb 1. PubMed PMID: 20133657; PubMed Central PMCID: PMC2840300	9.432	25
YI 0107	Dr Renea Taylor	2010	Taylor RA, Toivanen R, Risbridger GP. Stem cells in prostate cancer: treating the root of the problem. Endocr Relat Cancer. 2010 Sep 23;17(4):R273-85. Print 2010 Dec. Review. PubMed PMID: 20660571	4.282	2
YI 0107	Dr Renea Taylor	2011	Toivanen R, Berman DM, Wang H, Pedersen J, Frydenberg M, Meeker AK, Ellem SJ, Risbridger GP, Taylor RA. Brief report: a bioassay to identify primary human prostate cancer repopulating cells. Stem Cells. 2011 Aug;29(8):1310-4. doi: 10.1002/stem.668. PubMed PMID: 21674698	7.747	2

# APPENDIX 2 PEER REVIEWED PUBLISHED PAPERS 2007-2011

Grant ID	Principal Investigator	Year Published	Publication Title	Impact Factor	Citation Index
PEER-REVIEWED PAPER & REVIEWS (CONTINUED)					
YI 0107	Dr Renea Taylor	2012	Toivanen R, Taylor RA, Pook DW, Ellem SJ, Risbridger GP. Breaking through a roadblock in prostate cancer research: an update on human model systems. <i>J Steroid Biochem Mol Biol.</i> 2012 Sep;131(3-5):122-31. Epub 2012 Feb 8. Review. PubMed PMID: 22342674	3.053	0
YI 0107	Dr Renea Taylor	2012	Centenera MM, Gillis JL, Hanson AR, Jindal S, Taylor RA, Risbridger GP, Sutherland PD, Scher HI, Raj GV, Knudsen KE, Yeaton T; Australian Prostate Cancer BioResource, Tilley WD, Butler LM. Evidence for efficacy of new Hsp90 inhibitors revealed by ex vivo culture of human prostate tumors. <i>Clin Cancer Res.</i> 2012 Jul 1;18(13):3562-70. doi: 10.1158/1078-0432.CCR-12-0782. Epub 2012 May 9. PubMed PMID: 22573351	6.747	0
YI 0107	Dr Renea Taylor	2012	Taylor RA, Toivanen R, Frydenberg M, Pedersen J, Harewood L, Australian Prostate Cancer Bioresource, Collins AT, Maitland NJ, Risbridger GP. Human epithelial basal cells are cells of origin of prostate cancer, independent of CD133 status. <i>Stem Cells.</i> 2012 Jun;30(6):1087-96. doi: 10.1002/stem.1094. PubMed PMID: 22593016	7.747	1
YI 0107	Dr Renea Taylor	2012	Hussain S, Lawrence MG, Taylor RA, Lo CY; APC BioResource, Frydenberg M, Ellem SJ, Furic L, Risbridger GP. Estrogen receptor $\beta$ activation impairs prostatic regeneration by inducing apoptosis in murine and human stem/progenitor enriched cell populations. <i>PLoS One.</i> 2012;7(7):e40732. Epub 2012 Jul 10. PubMed PMID: 22808245; PubMed Central PMCID: PMC3393688	4.351	0
YI 0207	Dr Grant Buchanan	2007	Buchanan G, Ricciardelli C, Harris JM, Prescott J, Yu ZC, Jia L, Butler LM, Marshall VR, Scher HI, Gerald WL, Coetzee GA, Tilley WD. Control of androgen receptor signaling in prostate cancer by the cochaperone small glutamine rich tetratricopeptide repeat containing protein alpha. <i>Cancer Res.</i> 2007 Oct 15;67(20):10087-96. PubMed PMID: 17942943.	7.672	23
YI 0207	Dr Grant Buchanan	2008	Jia L, Berman BP, Jariwala U, Yan X, Cogan JP, Walters A, Chen T, Buchanan G, Frenkel B, Coetzee GA. Genomic androgen receptor-occupied regions with different functions, defined by histone acetylation, coregulators and transcriptional capacity. <i>PLoS One.</i> 2008;3(11):e3645. Epub 2008 Nov 10. PubMed PMID: 18997859; PubMed Central PMCID: PMC2577007	4.351	54
YI 0207	Dr Grant Buchanan	2009	Need EF, Scher HI, Moore NL, Cheong A, Ryan CJ, Wittert GA, Marshall VR, Tilley WD, Buchanan G. Collocation of AR Mutations in Prostate Cancer Reveals a Novel NTD Region Essential for N/C and p160 Interactions. <i>Endocrinology.</i> 150:2674-82, 2009	4.752	0
YI 0207	Dr Grant Buchanan	2009	Need EF, Scher HI, Peters AA, Moore NL, Cheong A, Ryan CJ, Wittert GA, Marshall VR, Tilley WD, Buchanan G. A novel androgen receptor amino terminal region reveals two classes of amino/carboxyl interaction-deficient variants with divergent capacity to activate responsive sites in chromatin. <i>Endocrinology.</i> 2009 Jun;150(6):2674-82. Epub 2009 Mar 12. PubMed PMID: 19282387; PubMed Central PMCID: PMC2689802	4.752	8
YI 0207	Dr Grant Buchanan	2009	Baniwal SK, Khalid O, Sir D, Buchanan G, Coetzee GA, Frenkel B. Repression of Runx2 by androgen receptor (AR) in osteoblasts and prostate cancer cells: AR binds Runx2 and abrogates its recruitment to DNA. <i>Mol Endocrinol.</i> 2009 Aug;23(8):1203-14. Epub 2009 Apr 23. PubMed PMID: 19389811; PubMed Central PMCID: PMC2718746	5.337	16
YI 0207	Dr Grant Buchanan	2009	Peters AA, Buchanan G, Ricciardelli C, Bianco-Miotto T, Centenera MM, Harris JM, Jindal S, Segara D, Jia L, Moore NL, Henshall SM, Birrell SN, Coetzee GA, Sutherland RL, Butler LM, Tilley WD. Androgen receptor inhibits estrogen receptor-alpha activity and is prognostic in breast cancer. <i>Cancer Res.</i> 2009 Aug 1;69(15):6131-40. Epub 2009 Jul 28. PubMed PMID: 19638585	7.672	29
YI 0207	Dr Grant Buchanan	2010	Diener KR, Need EF, Buchanan G, Hayball JD. TGF-beta signalling and immunity in prostate tumourigenesis. <i>Expert Opin Ther Targets.</i> 2010 Feb;14(2):179-92. Review. PubMed PMID: 20055717	4.038	4
YI 0207	Dr Grant Buchanan	2010	Bianco-Miotto T, Chiam K, Buchanan G, Jindal S, Day TK, Thomas M, Pickering MA, O'Loughlin MA, Ryan NK, Raymond WA, Horvath LG, Kench JG, Stricker PD, Marshall VR, Sutherland RL, Henshall SM, Gerald WL, Scher HI, Risbridger GP, Clements JA, Butler LM, Tilley WD, Horsfall DJ, Ricciardelli C; Australian Prostate Cancer BioResource. Global levels of specific histone modifications and an epigenetic gene signature predict prostate cancer progression and development. <i>Cancer Epidemiol Biomarkers Prev.</i> 2010 Oct;19(10):2611-22. Epub 2010 Sep 14. PubMed PMID: 20841388	4.289	10
YI 0207	Dr Grant Buchanan	2010	Need EF, O'Loughlin PD, Armstrong DT, Haren MT, Martin SA, Tilley WD; Florey Adelaide Male Aging Study, Wittert GA, Buchanan G. Serum Testosterone bioassay evaluation in a large male cohort. <i>Clin Endocrinol (Oxf).</i> 2010 Jan;72(1):87-98. Epub 2009 Mar 28. PubMed PMID: 19508600	3.201	2
YI 0207	Dr Grant Buchanan	2011	Buchanan G, Need EF, Barrett JM, Bianco-Miotto T, Thompson VC, Butler LM, Marshall VR, Tilley WD, Coetzee GA. Corepressor effect on androgen receptor activity varies with the length of the CAG encoded polyglutamine repeat and is dependent on receptor/corepressor ratio in prostate cancer cells. <i>Mol Cell Endocrinol.</i> 2011 Aug 6;342(1-2):20-31. Epub 2011 Jun 1. PubMed PMID: 21664238; PubMed Central PMCID: PMC3314496	3.611	1
YI 0207	Dr Grant Buchanan	2011	Wang Q, Bailey CG, Ng C, Tiffen J, Thoeng A, Minhas V, Lehman ML, Hendy SC, Buchanan G, Nelson CC, Rasko JE, Holst J. Androgen receptor and nutrient signaling pathways coordinate the demand for increased amino acid transport during prostate cancer progression. <i>Cancer Res.</i> 2011 Dec 15;71(24):7525-36. Epub 2011 Oct 17. PubMed PMID: 22007000	7.543	1



Grant ID	Principal Investigator	Year Published	Publication Title	Impact Factor	Citation Index
PEER-REVIEWED PAPER & REVIEWS (CONTINUED)					
YI 0207	Dr Grant Buchanan	2012	Need EF, Selth LA, Harris TJ, Birrell SN, Tilley WD, Buchanan G. Research Resource: Interplay between the Genomic and Transcriptional Networks of Androgen Receptor and Estrogen Receptor $\beta$ in Luminal Breast Cancer Cells. <i>Mol Endocrinol</i> . 2012 Nov;26(11):1941-52. doi: 10.1210/me.2011-1314. Epub 2012 Sep 28. PubMed PMID: 23023562	5.257	0
YI 0207	Dr Grant Buchanan	2012	Thompson VC, Day TK, Bianco-Miotto T, Selth LA, Han G, Thomas M, Buchanan G, Scher HI, Nelson CC; Australian Prostate Cancer BioResource, Greenberg NM, Butler LM, Tilley WD. A gene signature identified using a mouse model of androgen receptor-dependent prostate cancer predicts biochemical relapse in human disease. <i>Int J Cancer</i> . 2012 Aug 1;131(3):662-72. doi: 10.1002/ijc.26414. Epub 2012 Jan 24. PubMed PMID: 22275114	4.722	0
YI 0207	Dr Grant Buchanan	2012	Trotta AP, Need EF, Butler LM, Selth LA, O'Loughlin MA, Coetzee GA, Tilley WD, Buchanan G. Subdomain structure of the co-chaperone SGTA and activity of its androgen receptor client. <i>J Mol Endocrinol</i> . 2012 Jul 25;49(2):57-68. Print 2012 Oct. PubMed PMID: 22693264	3.221	0
YI 0707	Dr Jeff Holst	2011	Wang Q, Bailey CG, Ng C, Tiffen J, Thoeng A, Minhas V, Lehman ML, Hendy SC, Buchanan G, Nelson CC, Rasko JE, Holst J. Androgen receptor and nutrient signaling pathways coordinate the demand for increased amino acid transport during prostate cancer progression. <i>Cancer Res</i> . 2011 Dec 15;71(24):7525-36. Epub 2011 Oct 17. PubMed PMID: 22007000	7.543	1
YI 0707	Dr Jeff Holst	2011	Bröer A, Juelich T, Vanslambrouck JM, Tietze N, Solomon PS, Holst J, Bailey CG, Rasko JE, Bröer S. Impaired nutrient signaling and body weight control in a Na <sup>+</sup> neutral amino acid cotransporter (Slc6a19)-deficient mouse. <i>J Biol Chem</i> . 2011 Jul 29;286(30):26638-51. Epub 2011 Jun 2. PubMed PMID: 21636576; PubMed Central PMCID: PMC3143628	5.328	2
YI 0707	Dr Jeff Holst	2012	Tiffen JC, Bailey CG, Ng C, Rasko JE, Holst J. Luciferase expression and bioluminescence does not affect tumor cell growth in vitro or in vivo. <i>Mol Cancer</i> . 2010 Nov 22;9:299. PubMed PMID: 21092230; PubMed Central PMCID: PMC3002927	4.160	7
YI 0308	Dr Tanya Day	2010	Bianco-Miotto T, Chiam K, Buchanan G, Jindal S, Day TK, Thomas M, Pickering MA, O'Loughlin MA, Ryan NK, Raymond WA, Horvath LG, Kench JG, Stricker PD, Marshall VR, Sutherland RL, Henshall SM, Gerald WL, Scher HI, Risbridger GP, Clements JA, Butler LM, Tilley WD, Horsfall DJ, Ricciardelli C; Australian Prostate Cancer BioResource. Global levels of specific histone modifications and an epigenetic gene signature predict prostate cancer progression and development. <i>Cancer Epidemiol Biomarkers Prev</i> . 2010 Oct;19(10):2611-22. Epub 2010 Sep 14. PubMed PMID: 20841388	4.289	10
YI 0308	Dr Tanya Day	2012	Thompson VC, Day TK, Bianco-Miotto T, Selth LA, Han G, Thomas M, Buchanan G, Scher HI, Nelson CC; Australian Prostate Cancer BioResource, Greenberg NM, Butler LM, Tilley WD. A gene signature identified using a mouse model of androgen receptor-dependent prostate cancer predicts biochemical relapse in human disease. <i>Int J Cancer</i> . 2012 Aug 1;131(3):662-72. doi: 10.1002/ijc.26414. Epub 2012 Jan 24. PubMed PMID: 22275114	4.734	0
YI 0708	Prof Daniel Galvão	2009	Galvão DA, Taaffe DR, Spry N, Joseph D, Newton RU. Cardiovascular and metabolic complications during androgen deprivation: exercise as a potential countermeasure. <i>Prostate Cancer Prostatic Dis</i> . 2009;12(3):233-40. Epub 2009 Jun 2. Review. PubMed PMID: 19488067	2.062	2
YI 0708	Prof Daniel Galvão	2009	Hayes SC, Spence RR, Galvão DA, Newton RU. Australian Association for Exercise and Sport Science position stand: optimising cancer outcomes through exercise. <i>J Sci Med Sport</i> . 2009 Jul;12(4):428-34. Epub 2009 May 9. PubMed PMID: 19428291	3.03	23
YI 0708	Prof Daniel Galvão	2009	Newton RU, Taaffe DR, Spry N, Gardiner RA, Levin G, Wall B, Joseph D, Chambers SK, Galvão DA. A phase III clinical trial of exercise modalities on treatment side-effects in men receiving therapy for prostate cancer. <i>BMC Cancer</i> . 2009 Jun 29;9:210. PubMed PMID: 19563641; PubMed Central PMCID: PMC2713263	2.736	11
YI 0708	Prof Daniel Galvão	2009	Galvão DA, Spry N, Taaffe DR, Denham J, Joseph D, Lamb DS, Levin G, Duchesne G, Newton RU. A randomized controlled trial of an exercise intervention targeting cardiovascular and metabolic risk factors for prostate cancer patients from the RADAR trial. <i>BMC Cancer</i> . 2009 Dec 2;9:419. PubMed PMID: 19951446; PubMed Central PMCID: PMC2790468	2.736	12
YI 0708	Prof Daniel Galvão	2010	Schmitz KH, Courneya KS, Matthews C, Demark-Wahnefried W, Galvão DA, Pinto BM, Irwin ML, Wolin KY, Segal RJ, Lucia A, Schneider CM, von Gruenigen VE, Schwartz AL; American College of Sports Medicine. American College of Sports Medicine roundtable on exercise guidelines for cancer survivors. <i>Med Sci Sports Exerc</i> . 2010 Jul;42(7):1409-26. Erratum in: <i>Med Sci Sports Exerc</i> . 2011 Jan;43(1):195. PubMed PMID: 20559064	3.399	0
YI 0708	Prof Daniel Galvão	2011	Chambers SK, Newton RU, Girdis A, Nielsen L, Lepore S, Mihalopoulos C, Gardiner R, Galvão DA, Occhipinti S. Living with prostate cancer: randomised controlled trial of a multimodal supportive care intervention for men with prostate cancer. <i>BMC Cancer</i> . 2011 Jul 27;11:317. PubMed PMID: 21791109; PubMed Central PMCID: PMC3161036	2.736	0
YI 0708	Prof Daniel Galvão	2011	Galvão DA, Taaffe DR, Spry N, Joseph D, Newton RU. Acute versus chronic exposure to androgen suppression for prostate cancer: impact on the exercise response. <i>J Urol</i> . 2011 Oct;186(4):1291-7. Epub 2011 Aug 17. PubMed PMID: 21849187	4.016	1
YI 0708	Prof Daniel Galvão	2011	Galvão DA, Taaffe DR, Spry N, Newton RU. Physical activity and genitourinary cancer survivorship. <i>Recent Results Cancer Res</i> . 2011;186:217-36. Review. PubMed PMID: 21113766.	N/A	0

# APPENDIX 2

## PEER REVIEWED PUBLISHED PAPERS 2007-2011

Grant ID	Principal Investigator	Year Published	Publication Title	Impact Factor	Citation Index
<b>PEER-REVIEWED PAPER &amp; REVIEWS (CONTINUED)</b>					
YI 0708	Prof Daniel Galvão	2011	Galvão DA, Taaffe DR, Cormie P, Spry N, Chambers SK, Peddle-McIntyre C, Baker M, Denham J, Joseph D, Groom G, Newton RU. Efficacy and safety of a modular multi-modal exercise program in prostate cancer patients with bone metastases: a randomized controlled trial. <i>BMC Cancer</i> . 2011 Dec 13;11:517. PubMed PMID: 22166044; PubMed Central PMCID: PMC3267706	2.736	0
YI 0708	Prof Daniel Galvão	2012	Spry NA, Taaffe DR, England PJ, Judge JS, Stephens DA, Peddle-McIntyre C, Baker MK, Newton RU, Galvão DA. Long-term effects of intermittent androgen suppression therapy on lean and fat mass: a 33-month prospective study. <i>Prostate Cancer Prostatic Dis</i> . 2012 Aug 21. doi: 10.1038/pcan.2012.33. [Epub ahead of print] PubMed PMID: 22907511	2.421	0
YI 0708	Prof Daniel Galvão	2012	Newton RU, Taaffe DR, Spry N, Cormie P, Chambers SK, Gardiner RA, Shum DH, Joseph D, Galvão DA. Can exercise ameliorate treatment toxicity during the initial phase of testosterone deprivation in prostate cancer patients? Is this more effective than delayed rehabilitation? <i>BMC Cancer</i> . 2012 Sep 26;12(1):432. [Epub ahead of print] PubMed PMID: 23013489	2.736	0
YI 0708	Prof Daniel Galvão	2012	Bolam KA, Galvão DA, Spry N, Newton RU, Taaffe DR. AST induced bone loss in men with prostate cancer: exercise as a potential countermeasure. <i>Prostate Cancer Prostatic Dis</i> . 2012 Dec;15(4):329-38. doi: 10.1038/pcan.2012.22. Epub 2012 Jun 26. PubMed PMID: 22733158.	2.421	0
YI 1208	Dr Stuart Ellem	2009	Ellem SJ, Wang H, Poutanen M, Risbridger GP. Increased endogenous estrogen synthesis leads to the sequential induction of prostatic inflammation (prostatitis) and prostatic pre-malignancy. <i>Am J Pathol</i> . 2009 Sep;175(3):1187-99. Epub 2009 Aug 21. PubMed PMID: 19700748; PubMed Central PMCID: PMC2731137	5.673	14
YI 1208	Dr Stuart Ellem	2009	Ellem SJ, Risbridger GP. The dual, opposing roles of estrogen in the prostate. <i>Ann N Y Acad Sci</i> . 2009 Feb;1155:174-86. Review. PubMed PMID: 19250203	2.670	0
YI 1208	Dr Stuart Ellem	2010	Ellem SJ, Risbridger GP. Aromatase and regulating the estrogen:androgen ratio in the prostate gland. <i>J Steroid Biochem Mol Biol</i> . 2010 Feb 28;118(4-5):246-51. Epub 2009 Nov 5. Review. PubMed PMID: 19896534	3.053	26
YI 1408	Dr Michelle Hill	2011	Aung CS, Hill MM, Bastiani M, Parton RG, Parat MO. PTRF-cavin-1 expression decreases the migration of PC3 prostate cancer cells: role of matrix metalloprotease 9. <i>Eur J Cell Biol</i> . 2011 Feb-Mar;90(2-3):136-42. Epub 2010 Aug 21. PubMed PMID: 20732728	3.314	4
YI 1408	Dr Michelle Hill	2012	Inder KL, Zheng YZ, Davis MJ, Moon H, Loo D, Nguyen H, Clements JA, Parton RG, Foster LJ, Hill MM. Expression of PTRF in PC-3 Cells modulates cholesterol dynamics and the actin cytoskeleton impacting secretion pathways. <i>Mol Cell Proteomics</i> . 2012 Feb;11(2):M111.012245. Epub 2011 Oct 26. PubMed PMID: 22030351; PubMed Central PMCID: PMC3277761	8.791	1
YI 0409	Dr Stuart Ellem	2012	Hussain S, Lawrence MG, Taylor RA, Lo CY, APC BioResource, Frydenberg M, Ellem SJ, Furic L, Risbridger GP. Estrogen receptor $\beta$ activation impairs prostatic regeneration by inducing apoptosis in murine and human stem/progenitor enriched cell populations. <i>PLoS One</i> . 2012;7(7):e40732. Epub 2012 Jul 10. PubMed PMID: 22808245; PubMed Central PMCID: PMC3393688	4.351	0
YI 0010	Dr Matthew Naylor	2012	Moran-Jones K, Ledger A, Naylor MJ. $\beta$ 1 integrin deletion enhances progression of prostate cancer in the TRAMP mouse model. <i>Sci Rep</i> . 2012;2:526. Epub 2012 Jul 24. PubMed PMID: 22829980; PubMed Central PMCID: PMC3402831	N/A	0
<b>BOOK CHAPTERS</b>					
CG 0808	Prof Markus Seibel	2010	Zheng Y, Seibel MJ and Zhou H. Methods in Bone Biology: Cancer and Bone. <i>Osteoporosis Research: Animal Models</i>	N/A	N/A
YI 0107	Dr Renea Taylor	2012	Niranjan B, Lawrence MG, Papargiris MM, Richards MG, Hussain S, Frydenberg M, Pedersen J, Australian Prostate Cancer BioResource, Taylor RA, Risbridger GP (2012) Primary Culture and Propagation of Human Prostate Epithelial Cells In: <i>Epithelial Cell Culture: Methods in Molecular Biology</i> , Editor Scott Randell. 2nd edition. Humana Series, USA	N/A	N/A
YI 0207	Dr Grant Buchanan	2008	Buchanan G, Need EF, Bianco-Miotto T, Greenburg NM, Scher HI, Centenera MM, Butler LM, Robins DM, Tilley, WD. Insights from AR gene mutations. IN: Tindall DJ & Mohler JL (Eds) <i>Androgen action in prostate cancer</i> . Springer, New York	N/A	N/A



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