



**funding research  
in South Africa**

**RESEARCH**

# CANSA RESEARCH

As a leading role player in cancer research, CANSA is one of the very few public funded organisations in South Africa that has sustainable funding for research. These funds, mainly donated by bequest, have been invested for use in progressing cancer research. The funds are currently used across five research programmes categorised Type A, B, C, D and E. CANSA's core research focus is on epidemiology, early diagnosis, risk reduction and addressing service delivery needs for patients.

CANSA ensures that the scientific findings and knowledge gained from our research realign our advocacy focus and strengthen our education and service delivery programmes to the greater benefit of the public. Approximately R12 million is allocated to this annually, of which R6 million is dedicated to direct research costs.

## TYPE A RESEARCH

Our Type A funding programme is aimed at MChB and PhD cancer researchers based at South African universities and research organisations. The purpose of this funding is to support high-quality advance management and improve outcomes for the most common cancers in South Africa. This research programme accepts applications on the following topics:

- Epidemiology and determinants of the burden of cancer in South African populations
- Health seeking behaviours and early detection and diagnosis of cancer
- Health promotion and risk reduction of cancer, with a particular focus on behavioural risk reduction
- Optimal patient care including rehabilitation and palliative care services

- Other health services and health system research relating to the above categories
- Research relating to cancer biology/biochemistry/molecular biology as these relate to early detection, risk reduction and patient care.

Grants of up to R1.2 million over three years are awarded to projects based on scientific merit. In 2016, a total of 20 applications were received for funding, of which six projects were funded. We awarded R4 521 757 to this programme, of which, CANSA contributed R3 391 317. As at end 31 March 2017, a total of 11 projects came to an end while 12 are ongoing. Visits were made by the Head of Research to 14 of the Type A researchers nationally during the reporting period to discuss the progress of work and enhance the research outcomes.

## PUBLICATION AWARDS

Further, CANSA rewards those researchers who publish their work in accredited journals with an amount of R10 000 per publication. In total R150 000 was paid to the following researchers who completed their projects in 2015:

Dr Tony Serafin / Prof Lothar Böhm, University of Stellenbosch; Prof Liza Bornman, University of Johannesburg; A/Prof Tania Douglas, University of Cape Town; Dr Kurt Sales, University of Cape Town and Prof Maritha Kotze, University of Stellenbosch.

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	RESEARCHER	PROJECT TITLE	CATEGORY
1	Prof Wentzel Gelderblom, Cape Peninsula University of Technology	Chemopreventive potential of Rooibos in skin carcinogenesis	Basic science
2	Prof Catherine Kaschula, University of Cape Town & University of Stellenbosch	Identification of the Anti-Cancer Protein Targets of the Garlic Compound Ajoene in mouse xenograft model?	Basic science
3	Dr Ben Loos, University of Stellenbosch	The preventative abilities of a ketogenic diet and intermittent fasting in relationship to the carcinogenesis of astrocytoma	Basic science
4	Dr Adrienne Edkins, Rhodes University	Analysis of stem-cell associated genes in breast cancer as biomarkers and predictors of cancer malignancy	Basic science
	Dr Karl-Heinz Storbeck, University of Stellenbosch	The identification of novel biomarkers for prostate cancer	Basic science
6	Dr Ans Baeyens, University of the Witwatersrand	Genetic screening of triple negative and young breast patients in South Africa	Basic science
7	Prof Maritha Kotze, University of Stellenbosch	Establishing a cancer genomics registry to support the implementation of personalised medicine	Basic science
8	Dr Tony Serafin, University of Stellenbosch	Clinical markers for prostate cancer	Basic science
9	Prof Francois van der Westhuizen, North-West University	Early multimodal detection of cancers originating from synthetic hormonal therapy in a p53 knockout murine model	Basic science
10	Prof Fourie Joubert, University of Pretoria	An investigation into genetic variation in South African breast cancer patients using genome sequencing	Basic science
11	Prof Sharon Prince, University of Cape Town	Overexpression of the T-box transcription factor, TBX3, as an early marker of sarcomas	Basic science
12	Prof Anna Kramvis, University of the Witwatersrand	Functional Characterization of PRE-S1/PRE-S2 deletion mutants of Hepatitis B Virus isolated from Southern African HCC and HIV patients	Basic science
13	Dr Georgia Schäfer, University of Cape Town	The impact of Ephrin Receptor A2 polymorphisms KSHV infectivity and Kaposi's Sarcoma incidence and severity in HIV/AIDS patients in South Africa	Basic science
14	Prof Christopher Mathew, WITS	Identifying genetic markers of susceptibility to African Oesophageal Cancer	Basic science
15	Prof Ann Louw, University of Stellenbosch	Chemopreventive and/or chemotherapeutic action of a Cyclopia extract in rat models of breast cancer	Basic science

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	RESEARCHER	PROJECT TITLE	CATEGORY
16	Prof Viness Pillay, University of the Witwatersrand	Drug-loaded Nanomicelles Conjugated to Mucin Antibodies for Direct Targeting of Ovarian Cancer Cells Expressing Mucin Antigens	Basic science
17	Prof Lizette Jansen van Rensburg, University of Pretoria	Breast/ovarian cancer susceptibility in South African women: Role of DNA homologous recombination genes	Basic science
18	Prof Riana Bornman, University of Pretoria	Biologically relevant genetic markers of prostate cancer risk and aggressive disease within South African men	Basic science/clinical
19	A/Prof Jennifer Moodley, University of Cape Town	Pathways to breast cancer presentation	Public Health
20	Dr Jennifer Geel, Charlotte Maxeke Johannesburg Academic Hospital / WITS	Hodgkin Lymphoma in South African children and Adolescents from 2000 – 2010: A first report by the South African Children's Cancer Study Group (SACCSG)	Public Health
21	Prof Farai Nyabadza, University of Stellenbosch	Predictive models for HIV related Lymphomas	Public Health
22	Prof Sinead Delany-Moretlwe, WITS	Factors associated with anogenital HPV infection and disease prevalence, incidence, persistence: a prospective cohort study	Clinical/public health
23	Prof Anthony Figaji, University of Cape Town	Paediatric brain tumours in South Africa	Clinical/Public Health

## Graduates arising from CANSA granted projects ended 31 March 2016

CANSA acknowledges the importance of building the capacity of a new generation of cancer researchers to further develop much needed advances in cancer research in South Africa. Where appropriate our Type A grants permit students to work under the supervision of the Principal Investigator and grant holder to obtain a postgraduate qualification.

At the end of March 2016, a total of 11 researchers completed their CANSA research grants. CANSA is proud to be contributing towards the development of a new fraternity of cancer researchers for South Africa.

A total of 40 degrees were awarded to students:

- Honours = 9
- MSc = 21
- PhD = 10
- University of Cape Town 5
- University of Stellenbosch 15
- University of Pretoria 21



## CANSA DONATES MICROSCOPE TO NHLS AND WITS UNIVERSITY

In 2016, a Motic Biological Trinocular Microscope and Motic 5.0 Mega Pixel Live Resolution Digital Camera was awarded to Dr Jennifer Geel and her team at the Department of Haematology and Molecular Medicine at the National Health Laboratory Service and WITS University by CANSA.

Dr Geel and her team serve the paediatric oncology patients of Chris Hani Baragwanath Academic Hospital, Charlotte Maxeke Johannesburg Academic Hospital and WITS Donald Gordon Medical Centre. Their morphology, flow cytometry, cytogenetics and molecular departments provide diagnoses for the paediatric oncologists and their patients presenting with suspected leukaemia and lymphoma as well as other haematological conditions. The microscope and digital camera will be valuable to her department for the purposes of research, teaching and service.



**Megan Pentz Kluys**



**Professor Paul Ruff**

## MEET OUR NEW RESCOM MEMBERS

CANSA would not be able to run the Type A funding programme without the invaluable expertise of our Research Committee (RESCOM), made up of a group of cancer research experts based at South African institutions. They contribute to funding and other decisions in support of CANSA's Research department. In 2016, two new members were welcomed to the committee:

- Megan Pentz Kluys is a registered dietician with a Masters in Nutrition. Megan owns her own nutrition consultancy, consulting on various issues including diseases of lifestyle and gastrointestinal issues. Megan is currently involved in the committee for development of the 'South African Food Based Dietary Guidelines for the 0-7 year old group. Since 2007, Megan has also been the consulting dietician for CANSA.
- Professor Paul Ruff is Professor and Head, Division of Medical Oncology, Department of Medicine, University of Witwatersrand and Faculty of Health Sciences & Chief Specialist & Head: Division of Medical Oncology, Department of Medicine, Charlotte Maxeke Johannesburg Academic Hospital. He has a wealth of experience in oncology and is very familiar with the South African cancer research landscape.

**CANSA donates Microscope to NHLS and WITS University**

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## TYPE C RESEARCH: ENHANCING SERVICE DELIVERY

This is research conceptualised and conducted by CANSA, sometimes in collaboration with other institutions. Projects are focused on optimising services to cancer patients and addressing their needs.

- **PATIENT AND VOLUNTEER SURVEY STUDIES**

CANSA is constantly striving to improve the services we offer to cancer patients and in 2015 we implemented a nationwide survey of cancer patients who have made use of CANSA services in order to identify where improvements can be made and inform our service delivery going forward. In total, 418 service users completed an anonymous survey. Results were analysed in 2016, and overall, service users indicated that we are on track in providing a high quality service that meets their needs. Nonetheless, we were also able to identify some areas for improvement, and this provided the Service Delivery team with focus areas for future planning.

CANSA could not do what we do without the support of thousands of volunteers around the country. We recognise the value that volunteers provide and a national survey of volunteers was implemented with 243 volunteers providing anonymous feedback. Again, it was gratifying to find that overall our volunteers are very satisfied in their roles at CANSA, although, some of the feedback will be used to enhance the volunteer programme going forward.

- **PHOTOVOICE**

CANSA contributed funding towards a Photovoice Project led by Dr Lynn Edwards and Linda Greef. This qualitative study aimed to collect around 300 'stories' from people with

cancer, including any photographs, to highlight their experiences, with the aim of using the stories as a tool to highlight advocacy issues within cancer care provision and lobby for change. In total, 316 stories were collected and analysed and a paper on the findings with paediatric patients was published in the South African Journal of Oncology to date. The findings have also been presented on several occasions, at government level to the National Department of Health, local and international conferences, and to CANSA's Service Delivery team. They have also been used to inform the development of the Cancer Alliance Advocacy Toolkit, launched in March 2016. This project continues to make a significant contribution to our understanding of cancer patient experiences in South Africa, as well as inform advocacy initiatives and service planning, both within CANSA and nationally.

- **STAFF SUPPORT**

Many of our service delivery staff play a significant role in supporting those with cancer and those affected by cancer, throughout their cancer journey. This can at times be challenging work requiring considerable emotional input. To ensure that our service delivery team are able to offer a high-quality, sustainable support service, it's important that they too are adequately supported. A study was initiated to firstly, assess the support needs of our staff, and secondly, intervene to offer this support in a feasible, effective and sustainable way. CANSA's Head of Research is currently working with two researchers with experience in working with organisations that do compassionate work, to implement this project. The first phase of the project has been completed with ten confidential in-depth qualitative interviews held with CANSA Service Delivery staff, as well as a confidential online quantitative survey with 56 Service Delivery staff. This informed the development of phase two of the project, an intervention for support

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which is currently being piloted over a six-month period with two Service Delivery teams within CANSA.

- **CANCER STIGMA**

The stigma associated with cancer has been found to play a significant role in negatively impacting the psychosocial wellbeing of cancer patients, cancer risk reduction behaviour and adherence to treatment. While there is research evidence of this internationally, this has not been examined in any detail in South Africa. The experiences of our Service Delivery team indicate that cancer stigma is a significant problem in many of the communities in which they work. CANSA launched a qualitative study in KwaZulu-Natal and the Western Cape to examine this in more detail. Interviews and focus groups with cancer patients are currently underway to explore experiences of stigmatisation, the impact this has had, how people have coped and what their needs are for support and addressing this issue. Focus groups are also taking place with members of the public to explore from an 'outside' perspective why cancer is stigmatised. This is being explored in different race and cultural groups where different 'mental models' or perceptions of illness and cancer may exist.

- **EVALUATION OF TRAINING FOR ONCOLOGY REGISTRARS IN PALLIATIVE CARE**

CANSA has committed to co-fund with UCT, a study led by Dr Rene Krause, Prof Jeanette Parkes, Dr Liz Gwyther, Dr David Anderson and Dr Nadia Hartman, to evaluate a palliative care module to be implemented with oncology registrars at six universities across South Africa. This will be implemented in 2017/18 and findings will inform any improvements needed for the training.

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## TYPE D PROJECTS: COLLABORATIVE RESEARCH

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These projects are funded by CANSA and usually take the form of a partnership between CANSA and one or more research institution with the objective of combining resources to achieve a common goal. Such projects have budgets in the region of R1 million.

- **VITAMIN D: DETERMINANTS OF SERUM 25-HYDROXYVITAMIN D LEVELS IN ADULTS IN THE WESTERN CAPE PROVINCE OF SOUTH AFRICA**

There is some evidence that vitamin D deficiency has been found to be associated with an increased risk of certain cancers including breast, prostate and colorectal cancer. Exposure to solar radiation is a major source of vitamin D production. Greater exposure is required by people with darker skin tones in order to produce vitamin D.

CANSA is funding a study led by Janicke Visser at Stellenbosch University to determine vitamin D levels of individuals with diverse skin tones and from diverse geographic regions in South Africa at two time points (Winter and Summer) in order to establish whether individuals with darker skin tones are at risk for vitamin D deficiency, and possibly at increased risk for certain cancers. Data collection is complete and data analysis is underway. If vitamin D deficiency is established according to skin tone and seasonal variations, we can make recommendations for increasing vitamin D levels and thus potentially reducing the cancer risk. Different information may be required for people of different skin tones and our risk reduction messages can be more targeted and appropriate.



## TYPE E PROJECTS

These projects are aimed at building the capacity of South African cancer researchers through funding or co-funding of symposia and congresses on cancer research as well as travel grants of researchers presenting at research conferences or attending training locally and internationally.

Travel grants were awarded to:

- **Assoc Prof Jennifer Moodley** - attended Cancer Control training provided by National Cancer Institute in USA entitled 'Principles and Practise of Cancer Prevention and Control,' this training was used to inform the development of a cancer control module for the Masters in Public Health programme at University of Cape Town.
- **Prof Jeannette Parkes** - attended the 17th International Symposium on Paediatric Neuro-Oncology in Liverpool (11 to 16 June 2016), the abstract of her oral presentation was entitled 'Practical implementation of 3-D radiotherapy training in Africa with a focus on Paediatric Neuro-Oncology'.
- **Dr Tanya Schickerling** - attended the 2016, 48th Congress of International Society of Paediatric Oncology (SIOP) in Dublin, Ireland (18 to 22 October 2016), the abstract of her presentation was entitled 'The Necessity for a Paediatric Transplant Programme in a Developing Country'.

## CANCER RESEARCH SYMPOSIUM AT WITS

The Sydney Brenner Institute for Molecular Bioscience and WITS-MRC Common Epithelial Cancer Research Centre hosted a symposium co-funded by CANSA in February 2016 at WITS attended by 150 delegates. The symposium showcased cancer research at WITS, provided networking opportunities and promoted research collaborations. The programme covered sessions on epidemiology and surveillance, genetics and molecular biology, pathophysiology and therapy. CANSA's Head of Research awarded a prize for the best poster selected from 37 poster presentations.

## EVENTS, PRESENTATIONS AND COLLABORATIONS

### AFRICAN CANCER INSTITUTE-CANSA PARTNERSHIP

The African Cancer Institute (ACI) at the Faculty of Medicine and Health Sciences (FMHS), Stellenbosch University, formed a partnership with CANSA to focus on cancer research regarding public health, primary care, nursing, and rehabilitation sciences to build capacity for basic and advanced cancer care.

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The partnership was launched in June 2016 at a cancer research symposium at the FMHS with key experts addressing various aspects linked to vaccination against cervical cancer, rehabilitation of breast cancer survivors, smoking and cancer, nutrition in cancer management, funding opportunities for research and current research activities related to cancer.



Dr Melissa Wallace

Going forward the ACI and CANSA will focus on collaborative research projects as well as undertake workshops and conferences to advance the understanding of cancer and improving cancer care.

## MRC NATIONAL CANCER RESEARCH STRATEGY MEETING

In February 2016, the Medical Research Council (MRC) in collaboration with its partners in cancer research including CANSA, hosted a National Cancer Research Strategy two-day meeting to develop a cancer research strategy for South Africa. This was attended by 55 cancer researchers/stakeholders, mainly from South Africa, with some representation from Zambia, Botswana, Kenya and USA (NIH and Fred Hutchinson Cancer Research Center). Presentations from each group were delivered and recommendations for research in each of these areas, as a contribution towards a national cancer research agenda. The MRC plans to use this as a basis for designing their cancer funding programme.

## HEAD OF RESEARCH, DR MELISSA WALLACE ATTENDED THE FOLLOWING MEETING/CONFERENCES:

- **FIRST NANOTECHNOLOGY MEETING IN SA**

The South African Agency for Science and Technology Advancement (SAASTA) through the Nanotechnology Public Engagement Programme (NPEP), an initiative of the Department of Science and Technology (DST), and Nabio Consulting (Pty) Ltd presented a symposium on the impact of nanotechnology on cancer, in October 2016 in Pretoria. The symposium provided a platform for local researchers and industry to showcase ground-breaking academic and industrial research and promote development in the areas of cancer and nanotechnology.

- **THE AMERICAN ASSOCIATION FOR CANCER RESEARCH INTERNATIONAL CONFERENCE ON NEW FRONTIERS IN CANCER RESEARCH**

Held in Cape Town in January 2017, the innovative programme brought the forefront of cancer science to Africa and appealed to a broad spectrum of cancer researchers—from laboratory scientists to physicians in all disciplines of the cancer field. The programme included several sessions dedicated to cancers that have a high rate of incidence in Africa and included international speakers and local South African and African experts.



## positive feedback

*Dr Ben Loos of the Department of Physiological Sciences at Stellenbosch University wrote:*

*"CANSA is a most fantastic organisation, vital to move SA cancer research. Our glioma work was a great success and we would love to further build onto this momentum. Our SA research community is so small, we really need to support each other."*

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- **THE 31ST INTERNATIONAL PAPILLOMAVIRUS CONFERENCE**

The 2017 International Papillomavirus conference gathered researchers, clinicians and other health professionals to share knowledge and ideas on papillomaviruses and their associated diseases in February 2017 in Cape Town. Topics addressed included the burden of HPV-related disease, the implementation and impact of HPV vaccination programmes, as well as innovative cervical screening strategies and approaches for low and middle-income countries.

- **UCT CANCER CONTROL MODULE ON MASTERS IN PUBLIC HEALTH**

Our Head of Research, Dr Melissa Wallace was invited to form part of the curriculum team for UCT Masters in Public Health module on Cancer Prevention and Control, which began in February 2017. Dr Wallace gave a seminar entitled 'Behavioural research in cancer control' and developed an assignment for the course. The course provides a great opportunity to spark interest in cancer public health research, develop the capacity of future cancer researchers and make students aware of future CANSA funding opportunities.

- **ARTICLE IN CANCER CONTROL**

Cancer Control is a publication produced in association with the International Network for Cancer Treatment and Research and in 2016 published an article entitled 'Addressing obesity as a risk factor for cancer in South Africa: Size does matter', authored by Dr Melissa Wallace and CANSA's consulting dietician, Megan Pentz-Kluyts.



## positive feedback

*Dr Chantal Babb de Villiers, a medical scientist focusing on genetics and cancer wrote:*

"I want to thank CANSA for funding the project and for all the good work CANSA does. From a scientists point I can attest to how CANSA supports and encourages cancer research and also young researchers. I have seen how CANSA grants have provided a sound foundation for projects that have led to excellent cancer research within South Africa with many of the projects continuing afterwards. The new funding structure is a great improvement and will go far in providing better resources for South African cancer researchers to be able to do work relevant for South Africa.

I recently moved for an amazing opportunity at University of Cambridge, UK. I am working as a research associate on cancer risk prediction in breast, ovarian and prostate cancer at the Department of Public Health and Primary Care, Primary Care Unit, Cancer Group. I am keen to keep my South African associations where I can and am still linked to the University of Witwatersrand, Human Genetics Division."



## AG OETTLÉ MEMORIAL AWARD

The AG Oettlé Memorial award is presented in remembrance of the late Dr Oettlé, a cancer researcher and epidemiologist working in the South African Institute for Medical Research in Johannesburg in the 1960's, financed by CANSA. His research over 16 years strengthened the theory that environment may play a considerable role in causing cancer. He discovered an epidemic of oesophageal cancer in Africa and particularly the East Coast of South Africa. After his premature death, his family and colleagues decided to create the Oettlé Memorial awards to be awarded by CANSA to recipients who had significantly contributed to cancer control in South Africa.

## 2016 OETTLÉ AWARD

CANSA was delighted to present this award to Lizette Jansen van Rensburg, who completed a Bachelor of Science, an Honours and a Masters degree at Rand Afrikaans University, and in 1987, a PhD in Biochemistry at the University of Stellenbosch, and is currently the Associate Professor of Human Genetics in the Department of Genetics at the University of Pretoria (UP). After completing her PhD, she joined the newly established Department of Human Genetics at UP,

where her interest in cancer as an inherited disease began. In 1997 Lizette received her first CANSA research grant for a study of mismatch repair genes in black patients with colorectal cancer. Since then she has continued to study hereditary cancer predisposition. The group has identified unique founder mutations in the breast cancer susceptibility genes, BRCA1 and BRCA2, in South African breast cancer families, which have led to most pathology laboratories in South Africa offering breast cancer susceptibility testing based on these results. This has allowed for countless families/individuals to be empowered to manage their cancer risks pro-actively.

Associate Professor van Rensburg has established a platform for cancer genomic research in South Africa, particularly in relation to the BRCA1/2 genetic mutations; she has formed international collaborations which have contributed to moving the field forward, and she has trained numerous postgraduate students in an area of high relevance to the cancer landscape in South Africa. She is the author/co-author of 56 peer-reviewed publications and has presented 130 papers at national and international conferences.

Prof van Rensburg's work has contributed to earlier detection and enhanced management of inherited breast cancer in South Africa. CANSA honours Lizette van Rensburg in recognition of her significant contribution to advancing cancer research and reducing the impact of this disease in South Africa.

**2016 Oettlé Award winner  
Lizette Jansen van Rensburg**