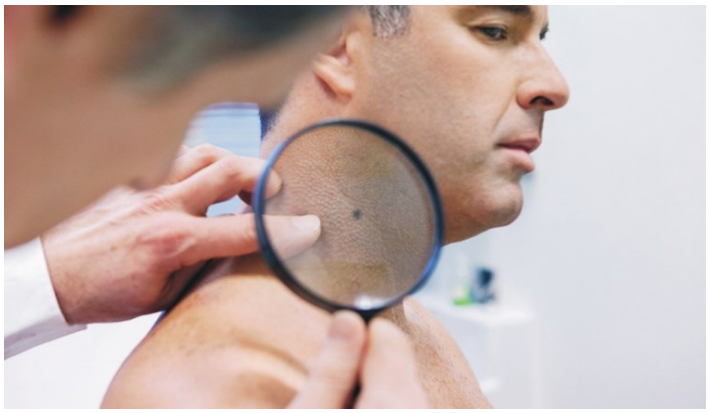
LIONS MEDICAL RESEARCH FOUNDATION



2018/2019 ANNUAL REPORT

Cover (top left to bottom right) -

- Lions Mobile Skin Cancer Screening Unit
- SA Deputy Premier Vickie Chapman is checked for skin cancer
- Skin cancer examination
- Researchers in action
- Music Therapy for new mother and baby at Flinders Hospital
- SA Health and Medical Research Institute Public Health Lecture

PATRON

His Excellency the Honourable Hieu Van Le AC
Governor of South Australia

The Lions Medical Research Foundation was formed in 1999 to fund and otherwise promote research and education into the prevention, detection and cure of disease and/or injury.

The Foundation discharges these responsibilities by annually awarding postgraduate scholarships in medical research.

It also operates a Mobile Skin Cancer Screening Unit through South Australia and the Northern Territory which I was pleased to launch in February 2017.

The Unit is staffed entirely by Lions and other volunteers and has already screened over 13,000 people with nearly one in four being referred to general practitioners or specialists for more detailed medical examination.

I congratulate the Lions Medical Research Foundation on another successful year and wish the organisation all the best for the future.

CONTENTS

The Lions Medical Research Foundation Inc. (Lions C Districts) is a "Not For Profit" company and charitable organisation which is endorsed by the ATO as an Income Tax Exempt entity and registered as a Deductible Gift Recipient with the Australian Charities Commission (ACNC)

GOVERNANCE

PATRON

His Excellency the Honourable Hieu Van Le AC Governor of South Australia

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CHAIR'S REPORT

It is with pleasure I present on behalf of the Board of Trustees the Annual Report of the Foundation (LMRF) for the year ending June 30th 2019. The LMRF proudly remains a joint initiative of the Lions 201C1 and C2 Districts.

The just completed year has seen some great strides forward for our Foundation, our Districts and ultimately for the public we serve.

We exist to promote, foster and fund research and education into the prevention, detection, and cure of disease. Through our work we strengthen communities, enhance quality of living, create positive interactions and foster individual health and wellbeing.

The Foundation's activities during this past year have centered between the skin cancer screening project; the ongoing provision and funding of PhD scholarships/grants for medical research; and this past year engaging in public education activities via public lectures through SAHMRI. Each year, millions of men and women worldwide, die because of conditions that are for the most part, significantly preventable. Our quest is to pursue that meaningful search for further relevant research and to pursue preventative strategies and education.

With respect to our research funding activities, this year has seen the continued involvement of the three currently funded scholarships with Adelaide University PhD students. We have also begun discussions about funding skin cancer research which looks exciting. The Foundation is one of the few research funding organisations that actively encourage and contribute to the development of new researchers right here in South Australia. My thanks to Dr Ainslie Derrick-Roberts PhD, chair of our Research Committee for her coordination, insight, and innovation regarding new projects

Skin cancer screenings have again been very successful with demand ever-growing. It appears that there is an approximately 22% suspicious lesion rate on those members of the public screened. This represents a significant community service especially for those in the rural sector. This year has led to a renewed focus on screener training with the development of new training modules in readiness for future demand. Sincere thanks to Mrs Marilyn Millar OAM who chairs and coordinates this Committee and its activities. It incurs substantial effort and commitment over a full twelve months and warrants our full congratulations to Marilyn and her team. Thank you to all the volunteer screeners, drivers and support staff for so much of their time and skills to support the project.

The Lions Skin Cancer Screening Project is now a Multiple Districts Category B project as we have WA, SA, and now Victoria engaged together in delivering this community service. Consequently, a new Lions Australia National Liaison Committee has been formed between the Lions Cancer Institute (WA), the LMRF, and the Victorian Combined Districts Foundation.

Please follow us on www.lmrfsa.org.au and also our accompanying Facebook site.

Financial matters

We are pleased to report that the Foundation has returned a strong financial result during this time. A set of financial figures are included in this report. The strong return has enabled the purchase of a new truck for the skin screening project.

Regular contributions from member clubs and other sources continue to be gratefully received. Our funds remain invested and along with dividends and interest earnt from invested monies, it provides an ongoing source of income. These funds are well managed by our investment advisors. Your Trustees always follow a sensible path towards meeting our obligations.

The financial support shown by member clubs and individual members as well as corporate identities is greatly appreciated. We are pleased to acknowledge the first-time sponsorship of $30,000 from the BankSA Foundation towards the skin screening project and look very much forward to their involvement.

Audited financial statements of our Foundation are attached and in doing so I express my sincere thanks to our Treasurer Graeme Pascoe OAM for all his hard work in this role and to our Auditor Hayden Edwards who has truly served our Foundation in a most professional manner over many years.

Trustees

Much appreciation to all Trustees: PDG Rhys Roberts OAM (Deputy Chair), PP Graeme Pascoe OAM (Treasurer), PDG Bryan Hearn (Secretary), Dr Ainslie Derrick-Roberts PhD, and PDG Michael Millar. Their commitment, effort and dedication remain extraordinary.

Further Thanks

Our appreciation to our screening partners - Lions Cancer Institute (WA) via Phil Chinnery and Colin Beauchamp AM, and the Victorian Districts Foundation and PCC Bruce Hudgson for all their assistance. My thanks again to Marilyn Millar OAM for her leadership, drive and dedication with the Skin Screening Project Committee. Much appreciation to the entire Skin Cancer Screening committee and project/support persons for their tireless endeavor and determination.

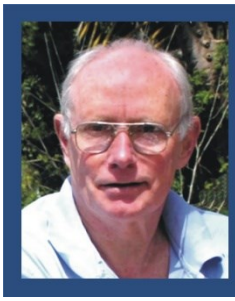
I express my thanks to PDG Bob Dewell OAM as the past Foundation Chair and current Foundation advisor. His counsel and advice continue to be invaluable.

In Conclusion

I thank all Lions members and member Clubs of Lions Districts C1 and C2 for their ongoing support of our Foundation and the work undertaken on your behalf for the betterment of our collective communities.

Yours in Lions

Phillip Donato OAM
Chair



SKIN CANCER - AN EPIDEMIC

Two out of every three Australians will be diagnosed with skin cancer.

It is the most common cancer affecting young Australians.

Early diagnosis has a critical impact on successful treatment because skin cancers can grow rapidly. Delays in diagnosis can and do prove fatal.

Every day, 6 Australians die from skin cancer. Quite aside from the human cost, the cost to the Australian health system is over $1 billion a year; and to the Australian economy in lost productivity over $2 billion a year.

Skin specialist services in SA and NT are limited or non-existent outside of Adelaide. There are no public funded skin cancer screening programs.

Lions solution has been to build and operate the Mobile Skin Cancer Screening Unit pictured on the cover of this Report.

It is staffed entirely by volunteers and operates from Mount Gambier to Darwin and Ceduna to Broken Hill.

These screenings are where people live and the screenings are **free**.

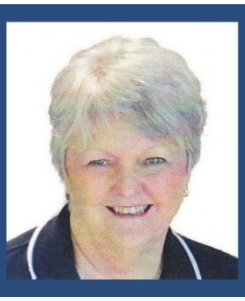
Through early detection and education about the dangers of skin cancers, these screenings are saving lives and, just as importantly in many cases, are saving others the trauma experienced by families who have to live and care for a loved one dying from skin cancer.

With over 13,000 people screened to date, the results show a consistent, astonishing and horrific average referral rate of 22% to general practitioners and specialists.

This alarming rate of referrals reinforces the need for promotion of regular skin checks, increased opportunities for people to access skin screening services, and ongoing education about prevention of skin cancer.

The mobile unit is helping Australians in SA, NT, and western NSW and Victoria to fight a fatal disease that is of epidemic proportions.

PDG Rhys Roberts OAM
Deputy Chair



SKIN CANCER SCREENING CHAIR'S REPORT

Thank you to the LMRF SA Board of Trustees, Committee Members, Screeners, Drivers, Administration and especially to the Clubs for their ongoing support.

Funds have been raised for a replacement truck which is now in operation. With the long distances travelled in our huge C1 and C2 Districts, maintenance on our original second hand truck was no longer cost effective.

Advertising and promotion has been extremely good. Interviews with ABC regional radio stations and articles in regional papers promote the screenings and Lions in a very positive manner.

Providing Lions Clubs with a free Community Health Service to promote their Club in their area has proven to be a positive Club Care project.

Lion Marilyn Millar OAM
Chair
Skin Cancer Screening Committee

Screening Data
1st July 2018 to 30th June 2019

Number of screening days	32.5
Total number screened	2,430
Number males	1,058
Number females	1,372
Total number of suspect lesions	985
Number suspected of being "life threatening"	636
Number persons referred to GP for further investigation	590 (24%)
Number screened within last 6 months	60
Number previously screened between 6 and 12 months ago	251
Number previously screened over 12 months ago	752
Number never been screened before	1,371
Total number of volunteer hours	7,091 hrs

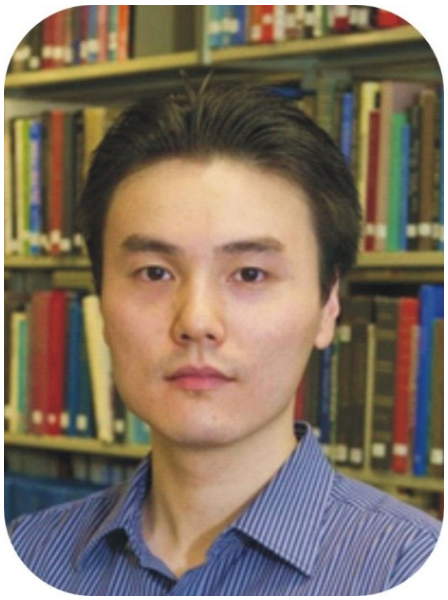
RESEARCH CHAIR'S REPORT

The Foundation is very keen indeed to grow and further develop the resources at its disposal so that more Lions Research Scholarships can be awarded to the very best PhD researchers.

This year has been the final year of support for three ongoing scholarships awarded to University of Adelaide PhD candidates Ms Kate Secombe, Ms Emma Akers and Ms Krystyna Gieniec.

The reports below highlight the progress of two of those scholars, Kate Secombe and Emma Akers; together with the final PhD research report of Dr Tiger Zhou on his work at Flinders University into the genetic causes of glaucoma.

Dr Tiger Zhou - Genetic Causes of Glaucoma



Primary open-angle glaucoma (POAG) is a common hereditary eye condition that leads to blindness if left untreated. The biggest risk factors for developing POAG are positive family history and high intraocular pressure (IOP). Patients with high IOP are said to have high tension glaucoma, while those with normal IOP have normal tension glaucoma.

The precise disease process of POAG remains elusive despite advances in our understanding of its genetic risk factors. Around five percent of POAG have been linked to known inherited genes found predominantly by genetic studies in large affected families. Variations in these genes are almost guaranteed to cause glaucoma.

Some common gene changes associated with increased POAG risk have been identified via genome wide association studies. These changes increase the risk of developing POAG by around 50 percent each at best. The genetic causes of a proportion of POAG are yet to be identified, and these most likely include rare disease-causing variants that are not detected by genome wide association studies or linkage studies in large families.

The advent of next generation gene sequencing, such as whole exome and RNA sequencing, has made comprehensive investigation of rare disease-causing variants possible. Prior to next generation sequencing, investigation of such gene variants would have been prohibited by time

and cost. Using whole exome sequencing, my thesis found the genetic contributions of all known single disease-causing gene inherited glaucoma in a group of patients with severe, young onset POAG to be 22.9 percent. This thesis also identified rare disease-causing variants in one gene associated with common glaucoma risk gene (CARD10). However, the presence of rare disease-causing variants in common glaucoma risk genes was not the norm, as no other cases were found in the remaining one hundred genes examined.

Using rare variant gene sequence analysis on our whole exome data, we identified neuroglobin as a POAG candidate gene. Neuroglobin is a highly conserved protein with neuroprotective properties that has been demonstrated in brain and retinal ischaemia. Three predicted disease-causing variants were identified in the glaucoma cohort of 187 participants with none in our control cohort of 1096 participants. However, further functional experimentation of the three predicted disease-causing variants is required to confirm their pathogenicity.

Using network and pathway analysis of the exome data from the high tension and normal tension POAG participants, this thesis identified potentially differing biological mechanisms involved in each disease subtype. Participants with high tension glaucoma harboured significantly more rare predicted disease-causing variants in genes associated with unfolded protein response, the biological pathway responsible for removal of misfolded insoluble gene products. Our hypothesis is that the accumulation of insoluble gene products damages the drainage mechanism of the eye, leading to high intraocular pressures and glaucomatous damage. Participants with normal tension glaucoma had over representation of damaging changes in genes associated with transmembrane transport homeostasis. Deficiency in this biological system is known to lead to increased susceptibility to programmed cell death, which we hypothesize occurs at the retinal ganglion cell level in glaucoma.

Our present ocular gene expression data acquired through RNA sequencing was found to have a greater dynamic range and sensitivity than the best available, previously published microarray ocular gene expression data. Archetypical high tension glaucoma genes were found to be selectively expressed within the trabecular meshwork, peripheral iris and ciliary body, which are tissues associated with intraocular pressure regulation. Network and pathway analysis of gene expression of ocular pressure related tissues identified focal adhesion and extracellular matrix interactions to be the pathways selectively enriched in these tissues. These pathways are involved in regulation of passage of material such as electrolytes, proteins and fluid between tissue spaces as well as mechanical forces acting upon tissues.

Publications:

1. Zhou T, Souzeau E, Sharma S, et al. PLoS One, 2017 Mar 6;12(3):e0172427.

2. Zhou T, Souzeau E, Sharma S, et al. Mol Genet Genomic Med, 2016 Oct 3;4(6):624-633.

3. Zhou T, Souzeau E, Siggs OM, et al. Invest Ophthalmol Vis Sci., 2017 Mar 1;58(3):1537-1544.

Ms Kate Secombe - Chemotherapy-induced Gastrointestinal Injury

With the assistance of the Lion's Medical Research Foundation, I have made significant progress in my studies. My project is focussed on understanding the role of the gut microbiome in determining risk of developing side effects such as diarrhoea and pain from chemotherapy treatment.

I have developed a mouse and rat model for this work and am now working on analysing the samples and results I have gained from these models.

In addition, I have been working on a clinical study. I am recruiting participants from the Royal Adelaide Hospital and Flinders Medical Centre to donate stool, saliva and blood samples before and during chemotherapy treatment.

This has involved a lot of time developing relationships with clinicians and developing appropriate protocols for sample collection. I have completed genetic analysis on saliva samples and will soon be beginning microbiome analysis of the stool samples. Initial results show that certain microbial profiles before beginning chemotherapy leads to a lower risk of developing diarrhoea.

These results are really important in targeting how we can effectively treat cancer without painful side-effects.

I have been able to publish three journal articles since beginning my PhD, and I hope to publish more of my research findings in the near future.

From September 2018-February 2019 I participated in an Australian Postgraduate Research Internship. During this internship I was placed in a research commercialisation company, and was able to gain a lot of experience in how medical research findings can be translated into clinical outcomes.

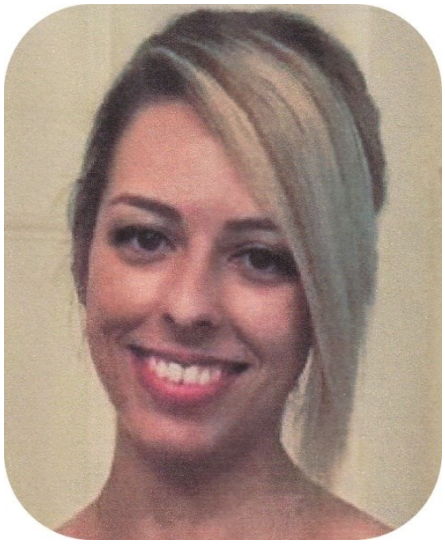
I have also been honoured to receive a travel grant from the Lion's Medical Research Foundation. This has enabled me to travel to the Multinational Association for Supportive Care in Cancer Annual Meeting in San Francisco this year. I gave two poster presentations and was also able to visit a nearby laboratory at the University of California, Davis, and present an update on my work to an industry collaborator based in San Francisco.

I am really proud that the travel grant also facilitated my travel to Canberra earlier this year to participate in the Falling Walls Lab Australia final.

This is a research communication and pitching competition. I finished second and have recently returned from the international final in Berlin.

I aim to submit my PhD by approximately June 2021 and wish to thank the LMRF for all their assistance so far.

Ms Emma Akers – The role of cholesterol in plaque stabilisation.



I would like to sincerely thank the Lion's Medical Research Foundation for their ongoing support since the 6th February 2017 through the PhD top up scholarship. I'd like to provide an update on how this scholarship has supported my PhD and our findings. From your generous support, I was able to focus entirely on my research into the role of cholesterol transporters in late stage artery disease, rather than divide my time between work and studies. This enabled me to generate results that I was able to present at two international conferences and many national or state conferences. From these experiences I was able to increase my knowledge base, network with peers and obtain leads towards careers after my PhD.
My studies are progressing on time and provided the remaining lab work runs smoothly my thesis should be submitted slightly early.

We found that the different cholesterol transport molecules have different roles in late stage disease, with some transporters working to actively stabilize any arterial blockages. Moving forward, these discoveries can be incorporated into novel therapeutics to avoid cardiovascular events such as heart attack or stroke. Thank you again for your support.

Other research news

The LMRF was a silver sponsor of the Australian Society for Medical Research Medical Research week in South Australia with a Gala dinner and Annual scientific meeting to provide important networking and presentation opportunities for local Honours, PhD students and post-doctoral researchers. The ASMR is an important advocate for health and medical researchers.

I am excited to announce that using my local networks, the LMRF have formed a collaboration with researchers from University of South Australia to further the research and data analysis from the mobile skin cancer screening project. We hope this will allow us to have an in depth follow up of patients and analysis of the outcome to determine the benefit of early detection of a range of skin cancer lesions and the long-term effects of this project in the community. We are also planning to fund a PhD project in a novel area of skin cancer treatment starting in 2020 and are currently looking for a suitable applicant to support their studies.

The ongoing support of Lions from Districts C1 & C2 as well as public donations and bequests will enable the Foundation to continue to achieve its aims and continue to support the talented researchers to help become the future researchers of tomorrow.

Dr Ainslie Derrick-Roberts
Research Committee Chair

TREASURER'S REPORT

Once again we received strong and substantial financial support from the Clubs. This was in addition to the time and effort that host clubs contributed to the screenings. While donations were a little lower than last year this was more than offset by fundraising and sponsorship received during the year. The substantial grant received from the BankSA Foundation was greatly appreciated and has been acknowledged by signage on the mobile unit.

The members of the Board are keenly aware of the many requests made to our Lions Clubs for financial support for their own communities as well as Lions projects and Lions Australia's many Foundations. They are also aware that Clubs are finding it more difficult to raise funds especially in smaller communities that make up many of the Clubs in our 201C1 and 201C2 Districts. With this in mind, rather than ask Clubs to increase their support, the Board approved the instigation of a telemarketing venture which has contributed strongly to our fundraising this year and holds out the promise of helping to ensure the financial viability of this outstanding C Districts' project. This venture also provides an annual "Special Children's Big Day Out" the first of which was held at the Mercury Theatre, 13 Morphett Street, Adelaide on Thursday 2nd May, 2019. A wide range of sick, handicapped and severally disabled children had a fun afternoon viewing a first release film.

We received very good returns from our invested funds even though they were a little lower than the exceptional returns received last year.

Following the conclusion of the current outstanding postgraduate scholarship expenditure for this year was the lowest for many years. As you would have seen from the Research Chair's Report plans are in hand for a new scholarship and research expenditure in 2019/20. This will lead to scholarship payments returning to the higher level of previous years.

Whilst screening activity was similar to last year we did not travel quite as far and wide. This led to the lower level of expenditure on Skin Cancer Screening.

The surplus for this year puts us in a good position for the expected higher level of expenditure over 2019/20 and we have already been able to replace our initial truck which was struggling to cope with towing the van in any adverse situation.

Graeme Pascoe OAM
Treasurer

Receipts and Payments Statement 2018-2019

	2019 $	2018 $
Receipts		
Donations		
- Screening	75026	73576
- Other	26600	44350
Fundraising/Sponsorship	49696	-
Other Income	6616	3062
Interest/Dividends	61847	76437
Total Receipts	**219785**	**197425**
Payments		
Scholarship Payments	25000	49000
Health Promotions	6450	9200
Skin Cancer Screening	50071	67564
Investment Payments	9334	8739
Administration Payments	10785	7520
Total Payments	**101640**	**142023**
Surplus(Deficit)	**118145**	**55402**

Balance Sheet at 30 June 2019

Current Assets		
Cash at Bank	227807	219720
Investments (at cost)	943212	824519
Refundable GST	1351	1575
Total Assets	**1172370**	**1045814**
Current Liabilities	8411	-
Total Liabilities	**8411**	**-**
Net Assets	**1163959**	**1045814**
Funds		
Accumulated funds brought forward	1045814	990412
Surplus (Deficit) for year	118145	55402
Accumulated funds carried forward	**1163959**	**1045814**

DONORS

(1 July 2018 - 30 Jun 2019)

BankSA Foundation
Colonel Light Gardens Senior Citizens Club
Findex
Lioness Club of Millicent
Lioness Club of Mount Gambier
Lions Club of Aberfoyle and District
Lions Club of Adelaide Italian
Lions Club of Balaklava
Lions Club of Barmera
Lions Club of Battunga Country
Lions Club of Beachport-Rivoli Bay
Lions Club of Blackwood
Lions Club of Broken Hill
Lions Club of Burnside
Lions Club of Cummins
Lions Club of East Torrens
Lions Club of Edwardstown
Lions Club of Elizabeth Playford
Lions Club of Gawler
Lions Club of Glenside
Lions Club of Golden Grove
Lions Club of Goolwa
Lions Club of Hahndorf
Lions Club of Hallett Cove and District
Lions Club of Irymple
Lions Club of Kadina
Lions Club of Kangaroo Island
Lions Club of Keith
Lions Club of Kingston
Lions Club of Litchfield
Lions Club of Loxton
Lions Club of Lucindale
Lions Club of Maitland
Lions Club of Marion
Lions Club of McLaren Districts
Lions Club of Merbien
Lions Club of Millicent
Lions Club of Modbury
Lions Club of Moonta
Lions Club of Mount Barker
Lions Club of Murray Bridge
Lions Club of Murray Bridge City
Lions Club of Noarlunga -Morphett Vale
Lions Club of Onkaparinga
Lions Club of Paralowie
Lions Club of Pinnaroo
Lions Club of Port Augusta
Lions Club of Port Lincoln
Lions Club of Port MacDonnell & District
Lions Club of Richmond
Lions Club of Seaford (Branch)
Lions Club of Stansbury Dalrymple
Lions Club of Tailem Bend
Lions Club of Tintinara
Lions Club of Tully
Lions Club of Victor Harbor Port Elliot
Lions Club of West Beach
Lions Club of Whyalla
Lions Club of Willunga
Lions District 201C1
Lions District 201C2
R Finlay

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