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Leader's Report, 2014-15

Summary of research in our Centre
Our Centre conducts research related to the eye. Based jointly in the Department of Ophthalmology (School of Medicine) and the Department of Optometry (School of Health Sciences) located within the Faculty of Medicine, Nursing and Health Sciences, our approaches include programs in clinical and translational research, strategic and applied research, and basic biomedical science.

Research higher degree student completions and current load
During 2014-5, three students (Dave, Irani and Kuot) submitted their PhD theses for external evaluation. All have been awarded their degrees and will graduate at ceremonies later in 2015. Our current PhD student load is 6 enrolled students.

Publications
From January 2014 to August 2015, members of the Centre have published (or have in press) 109 research articles, letters and editorials in peer-reviewed journals. Over the period 2009-2012, 12% of our articles and letters were in journals with impact factors of 5.0 or above. The figure has risen to 25% for 2014, and 33% for 2015 to date.

Grant funding
Centre members generated $2,470,302 in research grant income as Chief Investigators in 2014, according to the Flinders University Research Services Office, and $3,699,592 in 2014, according to the Centre's own records.

Presentations at national and international meetings
Since January 2014, Centre members have delivered over 90 presentations at international and national meetings. Of these, over 40 were by invitation.

Competitive fellowships, awards and prizes, recognition, collaborations and service
Members include one NHMRC Principal Research Fellow, one NHMRC Practitioner Fellow and one ARC Future Fellow. Centre members maintain extensive collaborations locally, nationally and internationally. Members belong to a variety of professional organizations, have organized scientific meetings, sit on national committees and editorial boards, and undertake extensive peer-review including on grant and fellowship review panels.

Research translation
The Centre operates the Centre for Clinical Eye Research in Evidence-Based Ophthalmology, the Australian and New Zealand Ophthalmic Surveillance Unit, the Australian and New Zealand Registry of Advanced Glaucoma, the Australian Corneal Graft Registry, and the Eye Bank of SA. Members ran an Evidence-based Ophthalmology Workshop in Hobart in 2015 and Evidence-based Optometry Workshops in Adelaide in 2014 and 2015.

Alignment with University Strategic Plan
We are increasing our research student load and mentoring, increasing our research outputs, growing our Centre size, increasing our collaborations, and increasing our service to the discipline and community. We are also attempting to improve, with some success, the quality of our publication outputs. We were delighted that our Centre was highlighted as a University Flagship in the recent Research Excellence publication (2015).
Mission Statement

Blindness has an enormous impact on quality of life, may shorten life-span and, according to the World Health Organization, is the most expensive of all causes of serious disablement. Our goal is to improve outcomes for patients in our community with blinding eye conditions.

Background to The Centre

Our Centre, first established in 2005 with support from Flinders University, conducts research related to the eye. Based in the Departments of Ophthalmology and Optometry, its members maintain extensive collaborations locally, nationally and internationally. Our common goal is to improve outcomes for patients in our community with blinding eye conditions. We focus on the nexus between vision and health, a major issue in Australia with its ageing population. Our overarching goal is to improve patient outcomes. Our research programs encompass basic biomedical science, applied research, clinical research, translational research, and health services management research. Our multidisciplinary research programs are geared to:

- understanding the pathophysiology and genetic background of common eye conditions;
- developing novel ophthalmic therapeutic agents and biomaterials;
- establishing and interrogating registers for common eye disorders;
- understanding the relationships between optical quality and visual performance;
- developing patient-reported measures of quality of life and new methods of care delivery;
- improving the evidence-base that underpins effective eye and vision care.

We currently focus on:

- corneal dystrophies and ectasias;
- inflammatory and infective eye conditions;
- glaucoma;
- congenital and adult cataract;
- retinopathy of prematurity, diabetic retinopathy and aberrant ocular angiogenesis;
- central retinal artery and retinal vein occlusion;
- quality of life and patient-recorded outcomes;
- ophthalmic disease/condition registries.

Key Performance Indicators (KPIs)

- PhD and other research higher degree student load and completions;
- publications (number and quality) in peer-reviewed journals;
- award of external grant funding;
- presentations at national and international meetings;
- research translation into clinical practice;
- establishment and maintenance of collaborations;
- recognition through fellowships, awards and other esteem factors;
- service to the disciplines of Ophthalmology and Optometry; and
- ERA performance.

Our KPIs have traditionally been rolled into 5 goals, see overleaf.
Performance measured against our Goals and KPIs

Goal 1: Increase the level of high-quality research activity. Encourage, support and expand multi-disciplinary research teams and next generation research.

KPI: Number of publications in peer-reviewed journals will increase by 10% over three years, compared with baseline (2008-10 = 147, averaging 49 per year). The quality of the journals in which Centre members publish, as judged by impact factors, will also increase.

In 2014, we published 63 articles, reviews, letters and editorials in peer-reviewed journals. In 2015 to date, we have already published or have in press 46 such contributions. Of more importance, over the period 2009-2012, 12% of our articles and letters were in journals with impact factors of 5.0 or above. The figure has now risen to 25% for 2014, and 33% for 2015 to date. High-impact papers in 2014-5 include several in Lancet and others in Nature Genetics, and a paper in 2015 in New Engl J Med.

KPI: Support the next generation of researchers by increasing the number of young researchers and the number and size of our multidisciplinary research teams.

The Centre's membership now (from 2014) includes early-career researchers (ECR) Dr Mona Awadalla, Dr Jyoti Khadka, Dr Miriam Keane, Dr Shilpa Kuruvilla, Dr Shervi Lie, and Dr Yuefang Ma. Ophthalmology ECR Dr Miriam Keane was accepted in 2014 into the DVC-R's young research leaders' programme and Optometry ECR Dr Jyoti Khadka was chosen to attend an NHMRC Grants Review Panel in 2015 as an observer. Two members of the Centre, Professor Justine Smith and Professor Keryn Williams, acted as mentors in the University's mentoring Scheme for Early Career Researchers in 2014.

Our research teams include ophthalmologists, optometrists, a pathologist, biologists, a mathematician, a genetic counsellor and a psychologist, and are multidisciplinary in nature. The research team established in 2013 by Level E Strategic Research Professor, Professor Justine Smith, now an ARC Future Fellow, has grown to 8 individuals. The specialist national registries in Ophthalmology operated through the Centre have increased in size.

Goal 2: Recruit and graduate RHD students. Enhance the research environment to attract, retain and increase our higher degree research student load.

KPI: Recruit one new externally-funded postgraduate student in the next two years and increase the number of PhD students within the Centre by two, subject to available space.

One new PhD student (Mallika Prem Sathil) was recruited in 2014, and two new PhD students (Andrew Stempel and Himal Kandel) started in 2015. The current RHD student load is six PhD students and one Masters student. Three PhD students (Alpana Dave, Yazad Irani and Abraham Kuot) submitted their theses for external examination over 2014-5: all theses were passed and the degree of PhD awarded. Georgia Kaidonis and Tiger Zhou, both medical graduates undertaking PhDs, were awarded externally-funded scholarships in 2014-5.

Goal 3: Compete effectively in the external funding environment. Improve national and international recognition. Build links with industry and other external bodies.

KPI: Ten percent increase in dollar amount of external grant support over past three years, compared with baseline.

Baseline research funding in 2010 totalled $2,769,281 according to Research Services Office (RSO) figures and $2,663,296 according to our Centre's own figures (see page 28). In 2014, our research funding totalled $2,470,302 according to the RSO and $3,699,592 (>10% increase) according to our own figures (documented in detail on pages 30-33).
KPI: Increase members' attendance as invited speakers at national and international conferences.
At baseline (2008-2010), members had presented 22 invited talks at international and national conferences per year on average. In 2014, the number grew to over 40 such invitations.

KPI: Increase membership of key committees and societies by 5%, compared with baseline.
At baseline, memberships of committees and societies totalled 39. Currently, members (including student members) belong to, or serve upon, over 100 such committees and societies. Of note, Professor Smith was President of the Association for Research in Vision and Ophthalmology (ARVO), during 2013-14 and is 2015-16 President of the American Uveitis Society. Professor Williams served on NHMRC GRPs in 2014 and 2015, and the Viertel Senior Medical Fellowships Medical Advisory Board in 2014 and 2015.

KPI: Increase the number of research collaborations, compared with baseline.
The Centre manages over 85 active collaborations with individuals and groups (a substantial increase from baseline), as assessed by authorship on publications.

KPI: Increase industry contracts by two over three years.
Some contracts have been generated (e.g. with SpecSavers), but these are for purposes of clinical care or teaching. We consider that we have failed to meet this particular KPI and would welcome assistance in trying to identify new commercial opportunities.

Goal 4: Contribute to the well-being of our professions and the general community, increase the evidence-base that supports clinical care, and increase translation of our research.
KPI: Increase collaborations with external researchers in areas of community need, compared with baseline.
The FCOEVR has established collaborations with bodies such as Glaucoma Australia, The Royal Society for the Blind (community of the vision-impaired), Keratoconus Australia (community of those with the common eye disease, keratoconus), and the Multiple Sclerosis (MS) Society (community of those with MS-related eye disease).

KPI: Organise one Evidence-Based Ophthalmology Workshop on average per year.
The FCOEVR organised Evidence-based Optometry Workshops in Adelaide in 2014 and 2015, and an Evidence-based Ophthalmology Workshop in Hobart in 2015.

KPI: Centre seminar program, held weekly during University semesters, should involve speakers from outside the Centre and focus on interdisciplinary research.
The Program operates from March to December each year during University semesters and includes both internal and external speakers (see pages 44-47).

Goal 5: Achieve sustainability in the broad sense (not necessarily financial) and return value to the University on its investment.
The FCOEVR is a vibrant and productive group that has brought far more into Flinders University in terms of RIBG, SRE, RTS, patent income and the infrastructure levy, than it has cost in terms of Research Development Officer (RDO) salaries. We have increased the University’s reputation through our publications, presentations, collaborations, awards, services to our discipline, as evidenced by our most recent ERA success (Ophthalmology and Optometry: ERA rank = 5).
Current Centre Membership

Professor Keryn Williams (Leader)
Dr Binoy Appukuttan (part-time)
Dr Mona Awadalla (on maternity leave from June 2015)
Dr Paul Badenoch†
Dr Veronika Bandara (to Feb 2015)
Associate Professor Celia Chen†
Professor Jamie Craig (Head of University Department of Ophthalmology)
Dr Alpna Dave (to Dec 2014; PhD awarded April 2015)
Dr David Hammond (to July 2014)
Dr Yazad Irani (PhD awarded June 2015)
Dr Miriam Keane
Dr Jyoti Khadka
Dr Abraham Kuot (PhD awarded August 2015)
Dr John Landers†
Dr Shervi Lie
Dr Yuefang Ma
A/Professor Richard Mills† (Head, FMC Department of Ophthalmology)
Professor Konrad Pesudovs (Head of Optometry)
Dr Shiwani Sharma
Professor Justine Smith
Dr Melinda Tea (to May 2014)
A/Professor Rod Watkins
Dr Jane Wells (to April 2015)

Affiliate, external and emeritus members
Dr Helen Brereton (retired)
A/Professor Kathryn Burdon (external)
Emeritus Professor Douglas Coster (retired)
A/Professor Sonja Klebe (affiliate)
Dr Colm McAlinden (external)
Dr Roman Serebrianik (external)

Clinical adjunct members
Dr Stewart Lake†
Dr Raymond Loh†
Dr Niladri Saha†
Dr Deepa Taranath†

Student members
Dr Jude Fitzgerald
Ms Sharhbanou (Shari) Javadiyan
Dr Georgia Kaidonis
Mr Himal Kandel (from 2015)
Dr Mallika Prem Sathil
Mr Andrew Stempel (from Sept 2015)
Dr Tiger Zhou
Research Associates and Assistants
Ms Susan Aldhous
Mr Liam Ashander
Mr Rhys Fogarty (to March 2014)
Dr Rachel Galettis (to Jan 2015)
Ms Ashleigh Hocking (to April 2015)
Ms Sarah Martin (to February 2015)
Ms Lauren Mortimer (maternity leave from May 2015)
Mrs Margaret Philpott (to Dec 2014)
Mr Stephen Pulbrook†
Ms Emily Pulford (from June 2015, part-time)
Ms Louise Wilson Smith (from April 2015, part-time)
Ms Emmanuelle Souzeau
Ms Jennifer Washington (from July 2015, part-time)

Adjunct members
Mr Andrew Brown (to Sept 2015, part-time)
Ms Madi Helm
Mrs Vicky Jones (part-time)
Mrs Lefta Leonardos (part-time)
Ms Bronwyn Ridge
Ms Karina Skrzpiec (part-time)

Research Development Officers
Ms Deb Sullivan
Ms Anne Cazneaux (to Oct 2014, part-time)

† SA Health/SA Pathology/FMC staff members
Governance

Governance of the Centre operates through an Executive Group comprising Professor Keryn Williams (contact for the University), A/Professor Richard Mills, Professor Jamie Craig, Professor Konrad Pesudos, Professor Justine Smith and A/Professor Celia Chen, supported by the Centre's senior Research Development Officer (RDO), Ms Deb Sullivan.

The Executive Group meets formally twice yearly, but is convened more frequently on an *ad hoc* basis when circumstances require. Executive Group meetings are minuted and are available for review if required by the Deputy Vice-Chancellor (Research). Informal meetings are convened to organise the Centre's Evidence-Based Ophthalmology and Optometry Workshops and to consider joint external grant applications.
**Research Higher Degree Students**

**Current PhD students**
- Ms Sharhbanou Javadiyan (Ophthalmology)
- Dr Georgia Kaidonis (Ophthalmology)
- Mr Himal Kandel (Optometry)
- Dr Mallika Prem Sathil (Optometry)
- Mr Andrew Stempel (Ophthalmology)
- Dr Tiger Zhou (Ophthalmology)

**Current Masters student**
- Dr Jude Fitzgerald (Ophthalmology)

**History of RHD doctoral student completions and load, 2010-2015**

<table>
<thead>
<tr>
<th>Year</th>
<th>Completions</th>
<th>Load</th>
</tr>
</thead>
</table>
| 2010 | Douglas Coster, DSc  
Sue Abhary, PhD  
Celia Chen, PhD by published work  
Sarah Brice, PhD  
David Dimasi, PhD | Mona Awadalla  
Alison Clarke |
| 2011 | Mona Awadalla  
Alpana Dave  
Yazad Irani  
Abraham Kuot  
Sharhbanou Javadiyan | Mona Awadalla  
Alison Clarke  
Alpana Dave  
Yazad Irani  
Abraham Kuot  
Sharhbanou Javadiyan |
| 2012 | Mona Awadalla  
Alpana Dave  
Yazad Irani  
Abraham Kuot  
Sharhbanou Javadiyan  
Georgia Kaidonis  
Tiger Zhou | Mona Awadalla  
Alison Clarke  
Alpana Dave  
Yazad Irani  
Abraham Kuot  
Sharhbanou Javadiyan  
Georgia Kaidonis  
Tiger Zhou |
| 2013 | Alpana Dave, PhD  
Alison Clarke, PhD | Alpana Dave  
Yazad Irani  
Abraham Kuot  
Sharhbanou Javadiyan  
Georgia Kaidonis  
Tiger Zhou |
| 2014 | Alpana Dave, PhD  
Yazad Irani, PhD  
Abraham Kuot, PhD | Alpana Dave  
Yazad Irani  
Abraham Kuot  
Sharhbanou Javadiyan  
Georgia Kaidonis  
Tiger Zhou  
Mallika Prem Sathil |
| 2015 | Alpana Dave, PhD  
Yazad Irani, PhD  
Abraham Kuot, PhD | Sharhbanou Javadiyan  
Georgia Kaidonis  
Tiger Zhou  
Mallika Prem Sathil  
Andrew Stempel  
Himal Kandel |
Highlights of 2014-15

Plenary Talks, Publications, Awards, Outreach, Notable Collaborations

**Professor Justine Smith** delivered a plenary lecture in 2014 at the Congress of the Chinese Ophthalmological Society. She will deliver the President’s Symposium Talk at the 2015 International Ocular Inflammation Society Congress, and presented the 2015 Inaugural Lecture in the new Flinders Investigators' Public Lecture Series. A manuscript published in New Engl J Med in May 2015 on Ebola uveitis generated intense interest in the international and national press and was the subject of a plenary presentation at ARVO in Denver, Colorado in the same month.

**Professor Jamie Craig** co-authored two manuscripts, one as senior author, published in the high-ranking journal Nature Genetics (impact factor = 29.4) in 2014, and a further two in 2015. He presented two plenary talks by invitation at the 2015 International Glaucoma Congress, and two at the Tasmanian RANZCO branch meeting in 2015. He continues to establish many productive national and international collaborations, as evidenced by his publication record. His work has also received substantial media attention in 2014-15.

**Associate Professor Richard Mills**, as Medical Director of the Eye Bank of SA, regularly provides presentations to Lions Clubs as part of the Eye Bank's programme of community outreach. He also chairs the Centre's weekly internal seminar programme. He delivered a platform presentation at the 32nd Annual Australia and New Zealand Cornea Society Meeting, in Perth in 2015, and was participant in the Centre's 2015 Evidence-Based Ophthalmology Workshop in Hobart in 2015.

**Professor Konrad Pesudovs** received the American Public Health Association Vision Care Section 2014 Outstanding Scientific Paper Award, and shared an award by the American Public Health Association for publications on the Global Burden of Disease. He is currently a member of a number of international committees including the Swedish National Cataract Register Steering Group and the International Consortium for Health Outcomes Measurement (ICHOM) Ophthalmology Group. In 2015, he was elected Chairman of the Board, National Vision Research Institute.

**Professor Keryn Williams** continues to serve as a member of the Charles and Sylvia Viertel Medical Advisory Board, and was appointed to NHMRC Grant Review Panels in 2014 and 2015. She was an invited speaker and Member of Faculty at a Gordon Research Conference on the Biology and Pathobiology of Cornea (California) in 2014 and as Scientific Director of the Australian Corneal Graft Registry, was an invited speaker at the Global Alliance of Eye Bank Associations Scientific Meeting and at the World Cornea Congress VII in San Diego, in 2015. In May 2015, the Australian Corneal Graft Registry celebrated its 30th birthday. Since its inception in 1985, over 30,000 records of corneal transplantation from across the country have been registered by over 750 ophthalmic surgeons.
Research Outputs

Publications

Data from 2010-2013 inclusive are as provided by RSO, September 2015. Data from 2014-2015 are from the Centre's records, as documented in the list below the table.

<table>
<thead>
<tr>
<th>Year</th>
<th>Peer-reviewed articles</th>
<th>Book chapters</th>
<th>Letters/editorials/other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>63</td>
<td>3</td>
<td>44</td>
<td>110</td>
</tr>
<tr>
<td>2011</td>
<td>52</td>
<td>1</td>
<td>32</td>
<td>85</td>
</tr>
<tr>
<td>2012</td>
<td>66</td>
<td>1 (book)</td>
<td>44</td>
<td>110</td>
</tr>
<tr>
<td>2013</td>
<td>56</td>
<td>1</td>
<td>20</td>
<td>77</td>
</tr>
<tr>
<td>2014</td>
<td>54</td>
<td>0</td>
<td>9</td>
<td>63</td>
</tr>
<tr>
<td>2015</td>
<td>41*</td>
<td>0</td>
<td>6</td>
<td>47</td>
</tr>
</tbody>
</table>

* to date, including those in press

Publications 2014-15

Refereed journal articles, 2014 calendar year


37. Memeni-Moghaddam, H., **McAlinden, C.M.**, Azimi, A., Sobhani, M. and Skiadaresi, E.
Comparing accommodative function between the dominant and non-dominant eye.

Graefes Archive for Clinical and Experimental Ophthalmology, 252(3) pp. 509-514. (Impact factor = 1.9)


52. Ullrich, K., **Craig, J.** and **Landers, J.** (2014). Ilopaminate challenge test can be used to differentiate glaucoma suspects from glaucoma patients. *Clinical and Experimental Ophthalmology*, 42(4) pp. 342-346. (Impact factor = 2.4)


**Letters/editorials/case reports/commentaries in refereed journals, 2014 calendar year**


57. **Coster DJ**, Keane MC, Williams, KA. Reply to correspondence from Dr Baydoun, Dr


*Refereed journal articles, 2015 calendar year*


27. Pan Y, Appukuttan B, Mohs K, Ashander LM, Smith JR. Ubiquitin carboxyl-terminal esterase L1 promotes proliferation of human choroidal and retinal endothelial cells. Asia Pac...


Letters/editorials/case reports/commentaries in refereed journals, 2015 calendar year

42. Awadalla MS, Burdon KP, Craig JE. Does the association between TMEM98 and nanophthalmos require further confirmation? Reply. JAMA Ophthalmol. 2015 Mar;133(3):359-60. (Impact factor = 3.3)


Other creative works, 2015 calendar year

# Grant Income

## Research Services Office Income Figures

<table>
<thead>
<tr>
<th>Year</th>
<th>Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>$2,769,281</td>
</tr>
<tr>
<td>2011</td>
<td>$2,220,137</td>
</tr>
<tr>
<td>2012</td>
<td>$2,157,213</td>
</tr>
<tr>
<td>2013</td>
<td>$2,487,934</td>
</tr>
<tr>
<td>2014</td>
<td>$2,470,302</td>
</tr>
</tbody>
</table>

## FCOEVR Income Figures from our own records

<table>
<thead>
<tr>
<th>Year</th>
<th>Income</th>
</tr>
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<tbody>
<tr>
<td>2010</td>
<td>$2,663,296</td>
</tr>
<tr>
<td>2011</td>
<td>$2,894,842</td>
</tr>
<tr>
<td>2012</td>
<td>$2,952,714</td>
</tr>
<tr>
<td>2013</td>
<td>$3,506,068</td>
</tr>
<tr>
<td>2014</td>
<td>$3,699,592</td>
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## Research Services Office Grant funding (external)

<table>
<thead>
<tr>
<th>Year</th>
<th>Category 1</th>
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<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
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<tbody>
<tr>
<td></td>
<td>$1,886,105</td>
<td>$1,540,195</td>
<td>$1,468,596</td>
<td>$1,468,949</td>
<td>$1,541,202</td>
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</tr>
<tr>
<td></td>
<td>$358,269</td>
<td>$118,248</td>
<td>$305,929</td>
<td>$197,155</td>
<td>$287,195</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$524,907</td>
<td>$561,694</td>
<td>$382,688</td>
<td>$821,831</td>
<td>$641,905</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$2,769,281</td>
<td>$2,220,137</td>
<td>$2,157,213</td>
<td>$2,487,934</td>
<td>$2,470,302</td>
<td></td>
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## Grant income (internal)

<table>
<thead>
<tr>
<th>Year</th>
<th>School (SOM)</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
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<tr>
<td></td>
<td>-</td>
<td>$170,060</td>
<td>$124,109</td>
<td>$185,000</td>
<td>$210,998</td>
<td>$209,816</td>
</tr>
<tr>
<td>Faculty (MNHS)</td>
<td>$100,000</td>
<td>$100,000</td>
<td>$100,000</td>
<td>$100,000</td>
<td>$182,846</td>
<td></td>
</tr>
<tr>
<td>DVC-Research</td>
<td>$270,060</td>
<td>$224,109</td>
<td>$285,000</td>
<td>$310,998</td>
<td>$392,662</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$570,060</td>
<td>$548,218</td>
<td>$570,000</td>
<td>$581,998</td>
<td>$692,482</td>
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NB. Figures in the table above include DVC-R and Faculty Centre funding.

## Expenses

<table>
<thead>
<tr>
<th>Year</th>
<th>Administrative staff (level, FTE fraction and cost)</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>HEO6 – 1.0FTE Cost = $66,840</td>
<td>HEO6 – 1.0FTE Cost = $85,587</td>
<td>HEO6 – 1.0FTE Cost = $87,382</td>
<td>HEO6 – 1.0FTE Cost = $92,700</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HEO5 – 0.7FTE Cost = $53,054</td>
<td>HEO5 – 0.7FTE Cost = $54,176</td>
<td>HEO5 – 0.7FTE Cost = $58,000</td>
<td>HEO5 – 0.5FTE* Cost = $30,641</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$119,894</td>
<td>$139,763</td>
<td>$145,382</td>
<td>$123,341</td>
<td></td>
</tr>
</tbody>
</table>

* No expenditure on HEO5 after October 2014.
Breakdown of ARC and NHMRC, in addition to any large grants (1M and above)

* Where the grant is not led by a Flinders staff member please include the name of the primary Flinders contact and their status in brackets.

<table>
<thead>
<tr>
<th>Year</th>
<th>Granting body</th>
<th>Lead CI*</th>
<th>Amount</th>
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<td>2014</td>
<td>ARC Future Fellowship</td>
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<td>2015</td>
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**Income**

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<td>Income from DVC-R</td>
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<td>Income from Faculty MNHS</td>
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<td>Total</td>
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2014/2015 Grant Income by Project


2011-2015 NHMRC Principal Research Fellowship #1002044. **KA Williams**. Improving Eye Health. $795,074 ($160,522 pa)


2012-2014 NHMRC Project Grant #1031362. **J. Craig**, S. Macgregor, A. Hewitt, **K. Burdon** and P. McCluskey. Novel blood pooling methodology for genome-wide association studies to identify major genetic determinants of five blinding eye diseases. $546,000 ($182,000 pa)


2012-2015 NHMRC Project Grant #1031838. **K. Pesudovs**. A system for measurement of vision specific quality of life using item banking and computer adaptive testing (ViSBank). $823,522 (2014:$267,212)

2012-2016 NHMRC Centre for Research Excellence #1023911. D. Mackey, **K. Burdon**, A. Hewitt and **J. Craig**. Translation of genetic eye research (TOGER). $2,500,000 ($199,991 pa)

2013-2015 National Institutes of Health (USA) #EY019875. **JR Smith**. Adhesion molecules in uveitis. US$1,309,000 (A$235,184 pa)

2013-2015 National Institute of Health (USA) #EY022009. **JR Smith**. B cell trafficking to the eye. US$423,500 (A$91,302 pa)


2013-2015 NHMRC Project Grant #1048302. L. Keay, L. Meuleners, **K. Pesudovs**, P. McCluskey, S. Boufous, J. Ng, N. Morlet and F. Stapleton. Understanding the impact of cataract vision impairment on risk of falling. $775,262 ($258,420 pa)


Graham, P. Healey and A. Agar. Towards translation of glaucoma blindness genes into clinical practice: predicting Risk Of Glaucoma: Relevant SNPs with Strong Association (PROGRESSA) Study. $956,020 ($191,204 pa)


2013-2015 CSL Eye Antibodies Royalties. D Coster, K Williams, M Thiel, H Zola. $17,000 ($5,677 pa)

2013-2015, Flinders University DVCR. K. Williams. Flinders Centre for Ophthalmology, Eye & Vision Research. $360,000 ($120,000 pa)

2014-2018 NHMRC Practitioner Fellowship #1065433 JE. Craig. Disease Registry based approaches to determining molecular risk factors for glaucoma blindness, and applying them in clinical practice. $387,298 ($77,460 pa)

2014-2016 NHMRC Project Grant #1066235 JR. Smith. Toxoplasma gondii infection of human retinal pigment epithelium. $445,505 ($148,501 pa)

2014-2017 Australian Research Council (ARC Future Fellowship). JR Smith. Molecular activities of retinal endothelial cells, retinal disease processes, biological therapies to address efficacy and safety deficiencies of current treatments. $989,144 ($247,286 pa)

2014-2016 Australian Organ and Tissue Donation and Transplantation Authority. K. Williams. Australian Corneal Graft Register. $484,786 ($242,393 pa)

2014 Perpetual Trustees. KA. Williams. Improving the quality of human donor corneas for corneal transplantation. $99,521.25

2014 Ophthalmic Research Institute of Australia (ORIA). K. P. Burdon, J. E. Craig and E. Souzeau. Identifying genetic causes of primary congenital glaucoma in Australia. $50,000

2014 Ophthalmic Research Institute of Australia (ORIA). S. Sharma and J. E. Craig. Molecular investigation of two novel genes associated with glaucoma blindness. $50,000

2014 Ophthalmic Research Institute of Australia (ORIA). J. R. Smith. Toxoplasma gondii infection of human retinal cells. $49,900


2014 Avant DIT Research Scholarship. G. Kaidonis. Investigation of the genetic aspects contributing to the development of diabetes related blindness. $50,000

2014 Flinders University DVC-R Near miss grant. B. Appukuttan, K. Williams and M. Michael. Susceptibility to oxygen-induced retinopathy: Identification of genetic targets and therapies. $50,000
2014 Flinders Medical Centre Foundation Grant. **JR Smith.** Retinal arterial and venous endothelial involvement in posterior uveitis. $17,678

2014 Flinders University Faculty of Medicine, Nursing and Health Sciences. R Haberberger, D Matusica, C Franco, D Hussey, **S Sharma, R Meech, H Muyderman.** Inverted fluorescence microscope with simple interface, and high quality digital image capture capability. $28,951*

2014 Flinders University Faculty of Medicine, Nursing and Health Sciences ‘Top Up’ grant. **KA Williams.** Anti-vascular endothelial growth factor-B as a biologic for treating eye disease. $20,000

2014 Flinders University Faculty of Medicine, Nursing and Health Sciences. **S Sharma, R Mills.** Are NADPH oxidases potential therapeutic targets for preventing cataract? $17,000

2014 Flinders University Faculty of Medicine, Nursing and Health Sciences. **M Awadalla.** Identifying novel genes in a congenital eye disorder, nanophthalmos, in New Caledonian families. $15,000

2014 Flinders University Faculty of Medicine, Nursing and Health Sciences Equipment Grant. T Chataway, T Gordon, **K Williams, D Keating, N Sims, E Sokoya.** AB SCIEX TripleTOF® 5600+ with Nanospray III source, Eksigent Ekspert Nano HPLC 415. $30,000*

2014 Flinders University Faculty of Medicine, Nursing and Health Sciences Equipment Grant. J Carr, **KA Williams, JR Smith.** Cryogenic liquid nitrogen storage unit. $29,501*

2014 Faculty of Health Sciences Seeding Grant. **S Klebe, KA Williams.** Establishment of an animal model of malignant mesothelioma to assess the effectiveness of inhibition of VEGFA in vivo. $16,000

2014 Flinders Medical Centre (FMC) Foundation Grant. **KA Williams, HM Brereton, S Klebe, C Chen.** Anti-vascular endothelial growth factor-B as a biologic for treating eye disease. $15,686

2014 Glaucoma Australia. **JE Craig, D Mackie.** TARRGET Study pilot phase. $100,000 ($50,000 to FUSA)

2015-2018 NHMRC Project Grant #1078442. JL Wilkinson-Berka, **JR Smith, HH Schmidt, B Appukuttan.** Inhibition of specific NOX isoforms as a new treatment for hypertensive and diabetic retinopathy. $823,372 ($205,843 pa)


2015 Channel 7 CRF. **JE Craig**, A Dubowsky, **KP Burdon**, ME Souzeau, M Awadalla, O Siggs. Improving genetic diagnosis and reproductive options for families with congenital, and developmental glaucoma. $74,800

2015 Flinders University DVC-R NHMRC near miss grant. **JE Craig, KP Burdon, S Macgregor, S John, A Hewitt.** Identifying high penetrance deleterious mutations in blinding glaucoma. $45,000

2015 Ophthalmic Research Institute of Australia (ORIA). **KP Burdon, S Sharma.** Development of detailed gene expression profiles for ocular tissues: The Eye Expression Atlas Project. $50,000

2015 Ophthalmic Research Institute of Australia (ORIA). **S Lie.** Defence mechanisms of specialized cells within the eye during parasite infection. $49,000

2015 Flinders University DVC-R NHMRC Near-Miss Award. **JR Smith.** Interactions between monocytes and endothelial cells in human retina. $44,846

2015 Rebecca L. Cooper Medical Research Foundation. **JR Smith.** Entry Route of Toxoplasma into Human Retina. $21,676

2015 Flinders Medical Centre Foundation Grant. **K Williams.** Improving the quality of human donor corneas for corneal transplantation. $38,000

* Equipment grants – not divisible but included in total.
** Allocation to FUSA still being negotiated and not included in total.
Conference Presentations

Dr Binoy Appukuttan


Dr Mona Awadalla


Associate Professor Celia Chen

Invited presentations

9 August 2014: SIGMA meeting. Sydney
Neuroprotection: where are we now?

20-21 June 2015. Tasmanian RANZCO State Branch meeting and Evidence Based Ophthalmology Workshop
Practicality of randomized controlled trial
Evidence of visual field therapy

16 May 2015 Australian College of Optometry
Optic neuritis - when to refer and what to look out for
Dangerous diplopia

1-4 April 2015: Asian Pacific Academy of Ophthalmology
Neuro-Ophthalmology symposium - Neuro-ophthalmology emergencies - Central retinal artery occlusion
Neuro-Ophthalmology Symposium - Challenging cases - Calcium and a grave digger
Neuro-Ophthalmology Symposium - Common diagnosis in Neuro-ophthalmology

20-21 March 2015: Taiwan Academy of Ophthalmology Annual Scientific Meeting. NTUH International Convention Center, Taipei, Taiwan.
Diplopia: a practical approach
Dangerous diplopia
Case presentation - Neuromyotonia

Professor Jamie Craig

Invited talks: International and national meetings and organisations

   Glaucoma endophenotypes IOP and disc. (Invited speaker)
   Update on new glaucoma genetics (Chair)

2015  Tasmanian RANZCO State Branch meeting and Evidence Based Ophthalmology Workshop, June 2015
   The prophylaxis of endophthalmitis.
   The role of OCT in glaucoma

Presentations at international and national meetings

2014:  Association for Research in Vision and Ophthalmology (ARVO)
   JE Craig, J Fitzgerald, S Ng, M Awadalla, AW Hewitt, DA Mackey, R Fogarty, KP Burdon. Epigenetic associations at the 9p21 glaucoma locus contribute to a female bias in normal tension glaucoma.


   JE Craig, KP Burdon, T Zhou, O Siggs, AW Hewitt, DA Mackey, P Gharahkhani, G Cuellar, S MacGregor. Genome-wide approach to detecting copy number variation in open angle glaucoma blindness utilizing the Australian and New Zealand Registry of Advanced Glaucoma. (poster)


   AJ White, U Pattamatta, Z McPherson, PR Healey, A Agar, JE Craig. Modulation of clinically significant genetic loci for glaucoma in a muring retinal explant model (poster)

KP Burdon, Y Lu, PN Baird, RA Mills, Y Bykhovskaya, S Sahebjada, YS Rabinowitz, X Li, S MacGregor, JE Craig
Genetic variation at the GPC6 gene is reproducibly associated with keratoconus in a genome-wide association study. (poster)


OM Siggs, S Javadiyan, S Sharma, KP Burdon, JE Craig
Partial duplication of CRYBB1 as a novel genetic mechanism for autosomal dominant congenital cataract. (poster)


JC Bailey, P Gharahkhani, LR Pasquale, JH Kang, JE Craig, S MacGregor, KP Burdon, JL Haines, JL Wiggs
Sex-specific primary open-angle glaucoma loci identified in a meta-analyzed genome-wide imputed dataset (poster)


Genetic susceptibility to open angle glaucoma: the Blue Mountains Eye Study (poster)


JJ Khong, L Wang, G Smyth, AA McNab, T Hardy, D Selva, S Sharma, KP Burdon, E Peter, JE Craig
Gene expression profiling of orbital adipose tissue in thyroid orbitopathy (poster)

Dr Jyoti Khadka
Presentations at international and national meetings


Pesudovs K, Khadka J, Fenwick EK, Lamoureux EL. Item banking enables stand-alone
measurement of driving ability from an activity limitation item set. The Association of Research in Vision and Ophthalmology May 3-7, 2015; Denver, USA. (Poster presentation)

Dr Miriam Keane
**Presentations at international and national meetings**
2014: The 31st Annual Australia and New Zealand Cornea Society Meeting, March
The influence of storage medium on corneal graft outcomes
2015: The 32nd Annual Australia and New Zealand Cornea Society Meeting, March.
Outcomes of endokeratoplasty after failed penetrating keratoplasty

Dr John Landers
**Presentations at international and national meetings**
2015: Tasmanian RANZCO State Branch Meeting and Evidence-Based Ophthalmology Workshop, June 2015. Tube vs trabeculectomy

Dr Shervi Lie
Association for Research in Vision and Ophthalmology Annual Meeting Denver, USA 2015
S Lie, LM Ashander, B Appukuttan, JR Smith. Expression of angiogenic regulators by human retinal cells infected with Toxoplasma gondii: understanding the clinical course of ocular toxoplasmosis. (Poster presentation; Young Investigator Award)

Associate Professor Richard Mills
**Chaired meetings**
2015: Tasmanian RANZCO State Branch meeting and Evidence Based Ophthalmology Workshop, June 2015
Hot topics in evidence-based Ophthalmology
The Ebola outbreak in West Africa: an intensivist on the frontline

**Invited talks: International and national meetings**
2015: The 32nd Annual Australia and New Zealand Cornea Society Meeting, March
Ocular surface squamous neoplasia – is surgery necessary?
2015: Tasmanian RANZCO State Branch meeting and Evidence Based Ophthalmology Workshop, June 2015. Collagen cross-linking (CCL)
2014: Mitcham Lions Club, Adelaide SA. *Eye Bank of South Australia*

Professor Konrad Pesudovs
**Invited presentations**
The inclusion of quality of life measures in glaucoma datasets. World Glaucoma Congress, Hong Kong, June 2015.
How to measure QoL and PROMs for cost-effectiveness studies? World Glaucoma Congress, Hong Kong, June 2015.
Conference presentations


**Dr Shiwani Sharma**

Conference presentations

2014  
NJ Van Bergen, **JE Craig,** AW Hewitt, **KP Burdon, S Sharma,** JG Crowston  
Mitochondrial impairments in primary open-angle glaucoma patient lymphoblasts  

2014  
I Trounce, N Van Bergen, V Chrysostomou, **K Burdon, S Sharma,** A Hewitt, **J Craig,** J Crowston  
Mitochondrial energetic impairment in glaucoma.  
XXI Biennial meeting of the International Society for Eye Research, San Francisco, USA, July 21-24. (Platform presentation by IT)

2014  
**S Sharma, S Martin, A Dave,** M Corbett, M Ronci, **K Burdon,** N Voelcker, **JE Craig**  
The ocular lens and environmental insult: interesting novel observations.  
XXI Biennial meeting of the International Society for Eye Research, San Francisco, USA, July 21-24. (poster)

2015  
JJ Kong, L Wang, G Smyth, AL McNab, T Hardy, D Selva, **S Sharma, KP Burdon,** E Peter, **JE Craig**
Gene expression profiling of orbital adipose tissue in thyroid orbitopathy
The Association for Research in Vision and Ophthalmology Annual Meeting, Denver, Colorado, USA, May 3-7. (poster)

Professor Justine Smith
Invited presentations
JR Smith. Translational studies of toxoplasma retinochoroiditis. 19th Congress of the Chinese Ophthalmological Society. Xi’an, China. 2014.
JR Smith. Toxoplasmosis. 27th Annual Registrars Conference and Teaching Course. Sydney, Australia.
JR Smith. Masquerade syndromes – Autoimmune retinopathy. 27th Annual Registrars Conference and Teaching Course. Sydney, Australia.

Dr Deepa Taranath
Presentations at national meetings
2014 ANZ Strabismus Society meeting, Sydney. Post squint surgery – infection survey conducted at the meeting.
2014 2\textsuperscript{nd} LSD (Lysosomal storage Disorders) Symposium, Sydney. Ocular disease in LSD – Disease surveillance and monitoring.

**Professor Keryn Williams**

**Invited presentations**

2014 Gordon Research Conference, Biology and Pathobiology of Cornea, California  
Gene therapy for corneal dystrophies and disease, where are we?
2014 31st Cornea Society Meeting, Brisbane  
Report from the Australian Corneal Graft Registry
2014 Oxford Medical Society Reunion, Adelaide  
An influx of Australians: the NDS from 1980-
2014 Royal Australian and New Zealand College of Ophthalmologists Annual Scientific Meeting, Brisbane  
With help from the ORIA, 1982-2014, with a focus on the early years
2015 30th Asia-Pacific Academy of Ophthalmology Congress, Guangzhou, China  
Gene therapy in corneal and limbal stem cell transplantation
2015 Global Alliance of Eye Bank Associations Scientific Meeting, San Diego, USA  
The Australian Corneal Graft Registry
2015 World Cornea Congress VII, San Diego, USA  
Corneal Graft Registries: benefits and risks
2015 32nd Annual Cornea Society and Eye Bank Meeting, Perth  
Report from the Australian Corneal Graft Registry  
To whom should outcome registries report?

**Other presentations**

2014 Flinders University Early Career Researchers network  
Building a CV for competitive fellowships
2014 SAHMRI Workshop  
How to win competitive fellowships
2014 SAHMRI Translational Neuroscience Day, Adelaide  
KA Williams
2014 Annual Scientific Meeting, TSANZ, Canberra  
KA Williams, MC Keane, R Galettis, RAD Mills  
Outcomes of corneal transplantation for herpetic eye disease
2015 Registries Heads Meeting, Organ Transplantation Authority (DonateLife)  
Update: the Australian Corneal Graft Registry

**Presentations by student members and research assistants**

**G Kaidonis, JE Craig, R Fogarty, MC Gillies, W Shen, S Sharma, B Appukuttan, B Pal, P Sundaesan, KP Burdon**
Genetic variation near GRB2 and KCNB2 identified by a genome-wide association study are reproducibly associated with diabetic retinopathy  
(Poster presentation)

2014 XXI Biennial Meeting of the International Society for Eye Research, San Francisco,
USA, July 21-24.

**A Dave, S Martin, R Kumar, JE Craig, KP Burdon, S Sharma**
Molecular analysis of congenital cataract causing mutations in the EPHA2 gene. (Selected for platform presentation; presented by PhD student AD; Travel Fellowship awarded to AD)

2014 International Society for Eye Research XXI Biennial meeting, San Francisco, 20th-24th July

**Y Irani, Y Tian, M Wang, S Klebe, NH Voelcker, JL Coffer, KA Williams**
A novel pressed porous silicon-polycapralactone composite as a dual purpose ophthalmic implant
*Y Irani won a young investigator travel award*

2014 Royal Australian and New Zealand College of Ophthalmologists ASM, 24 November

**E Souzeau**
Incidental findings from WGS/WES in research: ethical considerations.

2014 Royal Australian & New Zealand College of Ophthalmologists ASM, 24 November

**E Souzeau**
PITX2 and FOXC1 mutations in Anterior Segment Dysgenesis patients from the Australian & New Zealand Registry of Advanced Glaucoma (ANZRAG)
(Poster presentation)

2015 32nd Australia and New Zealand Cornea Society Meeting, Perth, 4th-7th March

**Y Irani, P Scotney, A Nash, S Klebe, KA Williams**
Anti-VEGF-B therapy in a rat model of corneal neovascularization

2015 ARVO Annual Meeting, Denver, Colorado, 3rd-7th May

**Y Irani, P Scotney, A Nash, S Klebe, KA Williams**
Anti-VEGF-B therapy in a rat model of corneal neovascularization
*Y Irani won a young investigator travel award; selected platform presentation*

2015 ASIA-ARVO. Yokohama, Japan

**L Ashander, B Appukuttan, Y Ma, D Gardner-Stephen, J Smith**
Transcription factor expression by human retinal endothelial cells in response to tumor necrosis factor (TNF)-α and interleukin (IL)-1β.


Common sequence variation in the VEGFC gene is associated with diabetic retinopathy and diabetic macular edema in Caucasian patients


**OM Siggs, S Javadiyan, S Sharma, KP Burdon, JE Craig**
Partial duplication of CRYBB1 as a novel genetic mechanism for autosomal dominant congenital cataract
(Poster presentation)
# Budget Acquittal and Financial Viability

**Cost Centre: 510-Ophthalm Eye & Vision**  
**Funding Unit: 43 Incl Exp by Project (Grants Office)**  
**Current Month: December 2014**  
**Date: 31-Aug-2015 13:47:02**

## Old Cost Centre Project:

### Income

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<th>Expenses</th>
<th>Commitment Surplus (Deficit)</th>
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<td>3230 - Funds Brought Forward</td>
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### Salaries

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<th>Income</th>
<th>Expenses</th>
<th>Commitment Surplus (Deficit)</th>
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<td>1801 - Salaries (Admin Contract)</td>
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<td>1806 - Welfare Comp (Admin Contract)</td>
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<td>1807 - Annual Leave Paid (Admin Contract)</td>
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<td>8,286</td>
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<td>3,433</td>
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<td>1811 - Admin Contract LSL Levy</td>
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### Non Salaries

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<td>2001 - Airline (Domestic)</td>
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<td><strong>126,128.30</strong></td>
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**TOTAL**  
(523.30)  
100,000.00  
126,128.30  
0.00  
(28,531.64)
Comment

The major costs for the Centre over the past 18 months have been the salaries of our Research Development Officers. Ms Anne Cazneaux moved to another (full-time) position elsewhere in the University in October 2014, given that we could not afford to continue her part-time position in our Centre with our available funds. Ms Debra Sullivan is funded until the end of 2015. Relatively small amounts of money have been used to support the Centre's Evidence-Based Ophthalmology and Optometry Workshops, which are a core undertaking for us. Without support for an RDO in 2016, the Centre is unlikely to remain viable.
<table>
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<tr>
<th>DATE</th>
<th>SPEAKER</th>
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<tbody>
<tr>
<td>11 March</td>
<td>Dr David Andrews RANZCO</td>
<td>RANZCO’s role in research</td>
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<tr>
<td>18 March</td>
<td>A/Prof Richard Mills &amp; Prof Jamie Craig Ophthalmology</td>
<td>Department Update</td>
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<tr>
<td>25 March</td>
<td>Dr Jane Wells Ophthalmology</td>
<td>Ophthalmology education: Helping students &quot;see the light&quot;</td>
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<tr>
<td>1 April</td>
<td>Dr Paul Badenoch Ophthalmology</td>
<td>Update on diagnostic ocular microbiology</td>
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<tr>
<td>8 April</td>
<td>Ms Vanessa Rowley Manager Casemix/ABF SALHN</td>
<td>Independent hospital pricing authority</td>
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<tr>
<td>15 April</td>
<td>No meeting</td>
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<tr>
<td>22 April</td>
<td>Ms Angela Chappell &amp; Mrs Margaret Phlipott Ophthalmology</td>
<td>Where there’s a will, there’s a way Passage to India</td>
</tr>
<tr>
<td>29 April</td>
<td>Prof Keryn Williams Ophthalmology/FCOEVR</td>
<td>Report from Gordon Conference (Cornea) 2014</td>
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<tr>
<td>6 May</td>
<td>Prof Tim Neild Dep Director, Medical Program, FUSA</td>
<td>A Quick Guide to the MD Program</td>
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<tr>
<td>13 May</td>
<td>Prof Jamie Craig Ophthalmology/FCOEVR</td>
<td>ARVO 2014 Update</td>
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<tr>
<td>20 May</td>
<td>Prof Ross McKinnon</td>
<td>Drug Discovery and Academia</td>
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<tr>
<td>27 May</td>
<td>Dr Mona Awadalla Ophthalmology</td>
<td>Report from Genemappers 2014</td>
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<tr>
<td>3 June</td>
<td>A/Prof Briony Forbes Discipline of Medical Biochemistry/Centre for Neuroscie, SOM</td>
<td>Mitogenic Signalling via the Insulin Receptor and its Role in Cancer.</td>
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<tr>
<td>10 June</td>
<td>A/Prof Geraint Rogers Director, Microbiome Research SAHMRI</td>
<td>The Ocular Microbiome</td>
</tr>
<tr>
<td>17 June</td>
<td>Prof Neil Dear Director, Research Support Services, SAHMRI</td>
<td>Discussion on the SAHMRI Animal Facility &amp; potential collaborations</td>
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<tr>
<td>24 June</td>
<td>A/Prop John Kaidonis School of Dentistry, Adel Uni</td>
<td>Oral biofilms in health and disease</td>
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<tr>
<td>1 July</td>
<td>Dr Georgia Kaidonis PhD Student, FCOEVR</td>
<td>ARVO 2014 review: Intravitreal injections for the treatment of Diabetic Macular Edema</td>
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<tr>
<td>8 July</td>
<td>Semester Break</td>
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<tr>
<td>15 July</td>
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<tr>
<td>22 July</td>
<td>Dr Jyoti Khadka Optometry &amp; Vision Science, FUSA</td>
<td>Development of a Novel System to Measure Quality of Life in Ophthal: The Eye-Tem Bank</td>
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<tr>
<td>29 July</td>
<td>Dr Owen Siggs Ophthalmology</td>
<td>Mutagenesis &amp; Mammalian Immunity</td>
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<tr>
<td>5 August</td>
<td>Mrs Angela Chappell Flinders Eye Clinic</td>
<td>My RetCAM Study Tour, Canada 2014</td>
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<tr>
<td>12 August</td>
<td>Dr Mark Hassall Flinders Eye Clinic</td>
<td>Retinal Gene Therapy</td>
</tr>
<tr>
<td>19 August</td>
<td>A/Prof David Lynn Biomedical Informatics FUSA/SAHMRI</td>
<td>Disease susceptibility from a network and systems biology perspective.</td>
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<tr>
<td>Date</td>
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<tr>
<td>26 August</td>
<td>Dr Bastien Llamas&lt;br&gt;ARC Senior Research Assoc&lt;br&gt;Ecology &amp; Evolutionary Biology, Uni of Adelaide</td>
<td>A few tales of a bygone age: ancient DNA studies of elephant birds, giant kangaroos, and First Americans</td>
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<tr>
<td>2 September</td>
<td>Dr Chris Powell&lt;br&gt;Medical Student, FMCl</td>
<td>Photochemical Smog and Adelaide’s Air Pollution.</td>
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<tr>
<td>9 September</td>
<td>No meeting</td>
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<tr>
<td>16 September</td>
<td>Prof Melissa Brown&lt;br&gt;Head, Molecular Micro Group&lt;br&gt;Assoc Dean (Research)/SOBS</td>
<td>The promiscuity of bacterial multidrug efflux pumps- how to get around them.</td>
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<tr>
<td>23 September</td>
<td>Dr Jill Carr&lt;br&gt;Microbiology and Infectious Diseases, Flinders Medical Science and Technology</td>
<td>A viral infection of endothelial cells that induces inflammation and functional changes.</td>
</tr>
<tr>
<td>30 September</td>
<td>Prof Neil Piller&lt;br&gt;Coordinator: Advanced Studies MD Program &amp; Electives Year 1 MD Program</td>
<td>Advanced Studies Component of the Medical Program</td>
</tr>
<tr>
<td>7 October</td>
<td>David Jacobs &amp; Jason Booth&lt;br&gt;Flinders Vision</td>
<td>Flinders Vision Optometry</td>
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<tr>
<td>14 October</td>
<td>A/Prof Lynley Bradnam&lt;br&gt;A/Professor of Physiotherapy&lt;br&gt;SOHS, Applied Brain Research Laboratory, Center for Neuroscience</td>
<td>How can Transcranial Magnetic Stimulation improve rehabilitation?</td>
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<td>21 October</td>
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<tr>
<td>28 October</td>
<td>Dr Peter van Wijngaarden&lt;br&gt;CJ Martin Fellow &amp; Retinal Fellow&lt;br&gt;Royal Vic Eye &amp; Ear Hospital; CERA</td>
<td>Rejuvenating remyelination of the central nervous system.</td>
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<tr>
<td>4 November</td>
<td>No meeting</td>
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<tr>
<td>11 November</td>
<td>Ms Alpana Dave</td>
<td>Final PhD seminar</td>
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<tr>
<td>18 November</td>
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<tr>
<td>25 November</td>
<td>RANZCO Conference</td>
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<tr>
<td>2 December</td>
<td>Mr Yazad Irani</td>
<td>Final PhD Seminar</td>
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<tr>
<td>9 December</td>
<td>Mr Abraham Kuot</td>
<td>Final PhD Seminar</td>
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2015

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<th>Date</th>
<th>Speaker</th>
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<tr>
<td>3 March</td>
<td>A/Prof Richard Mills &amp; Prof Jamie Craig&lt;br&gt;Flinders Ophthalmology</td>
<td>Department Update</td>
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<tr>
<td>10 March</td>
<td>Dr Jude Fitzgerald&lt;br&gt;Ophthalmology</td>
<td>Masters Update</td>
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<tr>
<td>17 March</td>
<td>Dr Tiger Zhou&lt;br&gt;Ophthalmology</td>
<td>PhD Progress Report</td>
</tr>
<tr>
<td>24 March</td>
<td>Dr Saulo Martelli&lt;br&gt;School of Computer Science&lt;br&gt;Engineering &amp; Mathematics, FUSA</td>
<td>Modelling human motion and skeletal biomechanics for a better health</td>
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<td>31 March</td>
<td>Dr Paul Badenoch&lt;br&gt;Flinders Ophthalmology</td>
<td>Safeguarding the recipients of eye tissue from infectious disease transmission</td>
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<tr>
<td>7 April</td>
<td>Dr Stephen Hardy&lt;br&gt;Commercial Manager&lt;br&gt;Flinders Partners Pty Ltd</td>
<td>Making an Impact</td>
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<tr>
<td>14 April</td>
<td>Dr Genevieve Oliver&lt;br&gt;Retinal Fellow&lt;br&gt;Flinders Ophthalmology</td>
<td>Ophthalmology in Timor-Leste</td>
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<tr>
<td>21 April</td>
<td>Dr Miriam Keane&lt;br&gt;ACGR</td>
<td>The Australian Corneal Graft Registry 2015 Report Preview</td>
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<tr>
<td>Date</td>
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<td>28 April</td>
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<td>5 May</td>
<td>Prof. John A. Long</td>
<td>Our deep distant origins: resolving the big steps in early vertebrate evolution</td>
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<td>President, The Society of Vertebrate Paleontology</td>
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<td>Vice President, The Royal Society of South Australia</td>
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<td>Strategic Professor in Palaeontology</td>
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<td>School of Biological Sciences</td>
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<tr>
<td>12 May</td>
<td>Prof. Mark Taylor</td>
<td>The Performance of Hip and Knee Replacement</td>
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<td>Professor of Biomedical Engineering Associate Dean for Research, School of Computer Science, Engineering and Mathematics</td>
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<tr>
<td>19 May</td>
<td>Dr Georgia Kaidonis</td>
<td>ARVO Report 2015/PhD Update</td>
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<td>Ophthalmology</td>
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<td>26 May</td>
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<td>2 June</td>
<td>Ms Emmanuelle Souzeau</td>
<td>‘Testing Update’</td>
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<td>9 June</td>
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<td>16 June</td>
<td>Dr Deepa Taranath</td>
<td>Update on Paediatric Myopia</td>
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<td>23 June</td>
<td>Shao Jia (Jo) Zhou, PhD</td>
<td>Food fortification to prevent iodine deficiency in Australia</td>
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<td>School of Agriculture, Food &amp; Wine &amp; FOODplus Research Centre</td>
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<td>30 June</td>
<td>A/Prof Tony Phillips</td>
<td>A Contact Lens Update</td>
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<td>7 July</td>
<td>Dr Yazad Irani &amp; Dr Shervi Lie</td>
<td>Report from ARVO 2015</td>
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<td>28 July</td>
<td>Dr Marten Snel</td>
<td>Modern Mass Spectrometry – the Swiss army knife of life science research</td>
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<td>Head, Mass Spectrometry</td>
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<td>Lysosomal Diseases Research Unit</td>
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<td>4 August</td>
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<td>11 August</td>
<td>Dr Richard Mills</td>
<td>Corneal Graft ‘Cross-linking’</td>
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<td>18 August</td>
<td>Prof David Day</td>
<td>Mitochondria and oxidative stress in plants</td>
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<td>Matthew Flinders Distinguished Professor</td>
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<td>25 August</td>
<td>Prof Sonja Klebe</td>
<td>Curcumin as an adjunct therapy following cancer</td>
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<td>Molecular Medicine and Pathology</td>
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<td>1 September</td>
<td>Prof Rob Saint</td>
<td>Flying in the face of conventional cancer research: understanding the consequences of chromosomal instability</td>
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<td>Deputy Vice Chancellor – Research</td>
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<tr>
<td>8 September</td>
<td>Dr Shiwani Sharma</td>
<td>Mechanisms of cataract development and beyond</td>
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<td>Flinders Ophthalmology</td>
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<td>15 September</td>
<td>Dr Laura Weyrich</td>
<td>Insights into human health and disease from the Neandertal microbiome</td>
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<td>Australian Centre for Ancient DNA Uni of Adelaide</td>
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<td>22 September</td>
<td>Prof Lyle Palmer</td>
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<td>Executive Director</td>
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<td>The Joanna Briggs Institute</td>
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<tr>
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<td>Speaker Name</td>
<td>Title/Position</td>
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<td>29 September</td>
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<tr>
<td>6 October</td>
<td>Dr Gayle Roberton</td>
<td>Senior Lecturer in Curriculum Development Health Professional Education Unit</td>
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<td>13 October</td>
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<td>20 October</td>
<td>Dr Karin Nordstrom</td>
<td>Flinders Medical Science and Technology AU, Anatomy and Histology</td>
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<tr>
<td>17 November</td>
<td>Shari Javadiyan</td>
<td>Final PhD seminar</td>
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Our People: 2014-5 in Pictures, and Media Releases
A NEW gene discovery is expected to help save the sight of tens of thousands of Australians with a common type of glaucoma.

Flinders University helped guide international research across six continents and 17 countries to find the new gene that can give you glaucoma. The gene makes people more susceptible to exfoliation syndrome, a common cause of glaucoma and blindness. It does not cause glaucoma, but increases the risk of developing the disease.

Flinders University ophthalmology Professor Jamie Craig said exfoliation syndrome was responsible for blindness in 7 per cent of Australian glaucoma sufferers with severe vision loss. "In this form of glaucoma there are deposits of abnormal protein in the front of the eye. That comes on with age and causes a blockage with drainage that puts up your eye pressure," he said. "We're trying to move towards a more sophisticated understanding where we think about what's gone wrong and develop new kinds of treatments that might stop this abnormal protein depositing in the eye and that might prevent the problem." In all Australians over age of 50, at least 3 to 5 per cent have this particular deposition of protein, Professor Craig said. "But that's not to say they all will get glaucoma," he said.

He said the problem was more common in other parts of the world, affecting half the glaucoma sufferers in Scandinavian countries. About 550 cases considered in the study came from the Australian and New Zealand Registry of Advanced Glaucoma, based in Adelaide. The National Health and Medical Research Council funded the initial research project, but the team soon realised they needed to join forces with collaborators around the world. The genome-wide association study is published today in the journal Nature Genetics. The gene discovery gives researchers fresh insight into the mechanism of disease. "It says that in some way the regulation of calcium levels in the eye has something to do with the build-up of protein," Professor Craig said. "In the future, different drugs could be developed to balance out the effects of this problem. It might prevent the build-up of material. These are the sorts of things that we look for in these studies, to find a new direction for treatment." Professor Craig encouraged everyone over the age of 40 to have a check-up for glaucoma every two years.
VISIONARY RESEARCH: Demystifying Toxoplasmosis and its effect on vision and in pregnancy

Wednesday 24 June, 5:30 - 7:30pm
Flinders University, 182 Victoria Square, Lecture Theatre 1, refreshments will be provided.
Register online: flinders.edu.au/flindersinvestigators

TOXOPLASMOSIS: A little known but surprisingly common parasite

Pregnant women of the first world have long known that cat faeces and undercooked meat are a risk to their unborn children. The stark reality is that the parasite infection behind these stories, toxoplasmosis, can be contracted in numerous ways, and primarily affects people aged between 20 and 50 years. Infecting one-third of the world’s population, and at least one in five Australians, the most common condition caused by Toxoplasma is a form of uveitis, which causes serious inflammation of the retina and can lead to permanent vision loss.

The warning signs of uveitis often appear suddenly and get worse quickly. Early diagnosis and treatment are important to prevent lifelong complications. A number of antibiotics can be used to treat ocular toxoplasmosis, but side effects are common, and no drug can completely eradicate the parasite from the body.

Professor Smith will discuss the challenges faced by those treating Toxoplasma infection, and describe the research she is undertaking to help us understand how this common parasite causes serious disease around the world.

PROFESSOR JUSTINE R. SMITH

Professor Justine R. Smith is an internationally recognized ophthalmologist and vision scientist. As Research Strategic Professor at Flinders University, Principal Research Fellow at SAHMRI, and Future Fellow of the Australian Research Council, Professor Smith’s work contributes to advances in treatment of a disease estimated to cause to cause 10% of blindness in Western countries, and more in the Developing World.

Professor Smith’s field of study focuses on uveitis, a disease with multiple causes, which results in inflammation inside the eye. Through her research, important discoveries on the mechanisms of infectious uveitis have been made. Separately, laboratory research and clinical trials led by Professor Smith have established the use of biologic drugs to reduce vision loss from non-infectious uveitis.

In May this year, Professor Smith co-authored a study published in the New England Journal of Medicine, which found that live Ebola virus was present in a patient’s eye fluid 10 weeks after the virus was no longer detectable in the patient’s blood. This discovery has major implications for the treatment of Ebola Virus Disease—a disease which caused fears of a worldwide epidemic—by showing that patients who survive the disease could still be carrying the virus even after their symptoms have subsided.

Professor Smith is a strong advocate for medical research across the globe, most recently in her role as President of the Association for Research in Vision and Ophthalmology, the largest global society for eye and vision research, with an 80-year history and 12,500 members in 75 countries.
Hard graft

Vision science and translational researcher Professor Keryn Williams gives an insight into current corneal transplant procedures and describes the path that steered her to this field.

Could you first provide an overview into your background, explaining what led you to study transplantation immunobiology and how this directed you to your career in ophthalmology?

My first postdoctoral position was in the Nuffield Department of Surgery at the University of Oxford, UK. My head of department there was an Australian surgeon, Professor Peter Morris, who was establishing a new renal transplant programme in the Thames Valley about the time I arrived. It was a very exciting place to be, and those of us who worked on the laboratory side of the department relished the task of trying to master transplantation immunobiology in order to help the clinical staff as much as possible.

After six years, it was time to return to Australia, and Professor Morris suggested to me that I might like to join the new Department of Ophthalmology being established at Flinders University. The Foundation Professor there, Douglas Coster, asked me to inject some science into what he described as 'the art of corneal transplantation'. These two surgeons have been wonderful mentors to me over my entire scientific career. It's impossible to overemphasise the impact of expert, visionary and kind mentors in the career of any scientist.

With whom do you collaborate and to what extent has a multidisciplinary approach proven important to the success of your projects?

Evidence suggests that collaborative research often has the biggest impact. We all collaborate widely, both nationally and internationally. For myself, I suppose in one sense my most important collaboration is with the 700-odd Australian ophthalmologists in a variety of academic and private practices who have so willingly provided a wealth of de-identified information on the outcomes of corneal transplantation in their patients over many years. Provision of this information is entirely voluntary, and it's just extraordinary that they support the Australian Corneal Graft Registry (ACGR) so graciously.

The benefit of a multidisciplinary approach is that it brings together researchers who have completely different skill-sets and ways of thinking about problems. The synergies are quickly apparent to all involved. Some of my most enjoyable and productive interactions have been with chemists and material scientists - who would have thought?

The goal of translational research - which forms a large part of your research portfolio - is to transform basic biomedical research discoveries from bench to bedside. What are the major challenges of such targeted research?

Translational research often takes an inordinate amount of time to yield outcomes of practical use. The pipeline from discovery to patient benefit can amount to a decade or more. For knowledge translation, the major difficulty after retrieving and disseminating the evidence lies in measuring changes in the pattern of practice.

Can you describe the advantages of using an evidence-based approach to measure outcomes in patients with eye disease?

The advantages are the same for any set of patient outcomes, whatever the disorder or disease: the best outcomes will be linked to therapeutic approaches that actually work. Some ineffective treatments may do no actual harm, but the individual may then...
Clear vision

Researchers at Flinders University, South Australia, have made significant impacts on ophthalmology, establishing new care and data facilities together with their cutting-edge research into the eye.

CORNEAL TRANSPLANTATION was one of the first transplant surgeries to have been successfully performed; unfortunately, it has also proven one of the hardest to perfect in relation to long-term graft survival. The cornea is a unique tissue, with a very high density of nerve endings but no blood supply, and has historically been considered to enjoy a degree of immune privilege. Although one might expect these qualities would make it less vulnerable to damage by the immune system, in fact about 30 per cent of full-thickness corneal grafts undergo rejection.

Inflammation and neovascularisation also predispose towards corneal allograft failure, which affects around 10 per cent of transplants in the first few years. In the long-term, the results are even less encouraging, with fewer than half of all corneal grafts surviving past 15 years. On top of this, the procedure requires tissue from deceased donors, producing a long waiting list in some jurisdictions. Even so, 1,500 Australians require corneal graft surgery every year either to restore vision or relieve pain – after all, transplantation is still the premier treatment for corneal opacity, globally the second-leading cause of blindness.\footnote{CHANGING THE GAME}

One team of researchers headed by Professor Keryn Williams, leader of Flinders University’s Research Centre for Ophthalmology, Eye and Vision and Scientific Director of the Australian Corneal Craft Registry (ACCR), has significantly altered this picture in Australia. In addition to the ACCR, the Eye and Vision Centre has established and maintains a number of other ophthalmological registries including the Australian and New Zealand Registry of Advanced Glaucoma, the Registry of Advanced Diabetic Retinopathy, and the Australian and New Zealand Ophthalmic Surveillance Unit, all of which have a strong influence on clinical practice.

Since arriving at Flinders in 1981, Williams and her collaborators have been responsible for radical improvements, not only to knowledge in the field of ophthalmology, but also to the facilities and best clinical practice available to patients in need of corneal transplant or treatment for numerous other diseases of the eye.

In 1982, the new Department of Ophthalmology was responsible for establishing both Australia’s first formal eye bank and its first corneal transplant programme.

Registering an interest

In May 1985, Professor Keryn Williams founded the Australian Corneal Craft Registry (ACCR), collecting de-identified information on human corneal transplants from all over Australia. After almost 30 years of operation, the Registry now contains records of more than 27,000 transplants – and is therefore an invaluable resource for clinicians.

The idea of the Registry was based on the success of others established for vascularised organ transplantation, including the one championed by Williams’ mentor Professor Peter Morris for kidney transplants. “The utility of these registries was obvious, and we thought that such an approach might also be very useful for corneal transplantation,” Williams recalls.

Around 700 ophthalmologists participate in the programme, supplying initial information at registration about the recipient, donor, operative procedure and practice of the eye bank, and then follow-up data at annual intervals until the graft is lost or the death or loss-to-follow-up of the patient. The information is then checked for consistency and added to the Registry’s database, before ultimately being subjected to detailed analyses and compiled into a regular report.

Today, the ACCR is probably the largest repository of clinical corneal transplantation data in the world – and it certainly contains the most sustained patient follow-ups. It serves as a model for those establishing new registries around the world.
INTELLIGENCE
RESEARCH IN THE DEPARTMENT OF OPHTHALMOLOGY

OBJECTIVES
To improve graft survival and visual outcomes for patients who require corneal transplants to restore vision or relieve pain.

KEY COLLABORATORS
Associate Professor Richard Mills; Professor Jamie Craig; Professor Justine Smith; Associate Professor Celia Chen; Associate Professor Sonja Kiebe; Dr Miriam C Keane; Dr Rachel Galettis, Flinders University, Australia
Staff of the Eye Bank of South Australia, Flinders University, Australia
The many Australian ophthalmologists who contribute information to the Australian Corneal Graft Registry, Flinders University, Australia

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PROFESSOR KERYN WILLIAMS is Leader of the Research Centre for Ophthalmology, Eye and Vision at Flinders University, Australia, as well as being Scientific Director of the Australian Corneal Graft Registry (ACGR). Williams conducted her PhD at the University of Melbourne, Australia, before undertaking postdoctoral research at the University of Oxford's Nuffield Department of Surgery, UK, where she developed her interest in transplantation immunobiology. On her return to Australia, Williams joined the new Department of Ophthalmology at Flinders University. She founded and is Scientific Director of the ACGR and is NHMRC Principal Research Fellow at Flinders University.

Key facts
- The cornea is the transparent window at the front of the eye which, if damaged, can cause blindness.
- Corneal damage is the second leading cause of blindness worldwide.
- Every year 1,500 Australians need a corneal transplant, with all graft donations coming from human eyes.
- 90 per cent of corneal grafts survive for one year, but fewer than 50 per cent survive longer than 10 years.

Advancing an expanded day surgery unit, increasing the availability of ophthalmologic procedures as well as donor tissues. 15 years later, Flinders scientists published a paper demonstrating for the first time that advanced donor age made little difference to graft success. As a result of this discovery, which has been duplicated in the US and elsewhere, corneal donations became far more abundant in Australia.

DATA MINING
The research being conducted at Flinders' Department of Ophthalmology ranges widely, covering topics related to clinical practice in the treatment of many diseases including retinopathy, macular degeneration and glaucoma, as well as less prevalent but equally troubling conditions such as eye disorders of newborns, intraocular infections and diseases of the ocular surface. Helping to reduce the burden of blindness and corneal disease by improving corneal transplant procedures, however, is still an enduring priority for Williams and her group. Towards this end, much of the work they undertake involves drawing conclusions from ACGR data.

In recent years, the Flinders team has published a number of papers making excellent use of the ACGR database in order to guide clinical practice and inform research. These studies have revealed the heightened risk of graft failure when using corneas transported by air-flight from other states, over long distances, and which came from overseas. In patients with bilateral corneal grafts, graft rejection episodes in one eye following rejection in the other. An increased understanding of paediatric graft survival, long-term graft survival in penetrating keratoplasty, and lamellar versus penetrating keratoplasty has all been achieved from mining this valuable source of information.

FUTURE PLANS
One promising route to improved graft survival being pursued by Williams and her colleagues is that of gene therapy, which involves transferring genes into the donor corneal tissue prior to transplantation. Using an ovine model, the researchers have already demonstrated that this method of immunomodulation can significantly prolong corneal graft survival. Their subsequent aims are to characterise, construct and test lentiviral vectors for the effective delivery of these therapeutic genes. The scientists theorise that this might be possible to extend allograft survival indefinitely, provided that multiple transgenes in the donor cornea are able to target several pathways of potential graft damage.

Williams and her team are confident that their research is leading the way in this area, with the potential to benefit thousands of people worldwide. One promising route to improved graft survival being pursued by Williams and her colleagues is that of gene therapy, which involves transferring genes into the donor corneal tissue prior to transplantation...
Australian Corneal Graft Registry celebrates 30th Anniversary

Ms Yael Cass, CEO of the Organ and Tissue Authority congratulates the Australian Corneal Graft Registry on reaching its 30 year milestone. The Australian Corneal Graft Registry, currently headed by Professor Keryn Williams, operates an Australia-wide register of human corneal transplants and recently celebrated its 30 year anniversary. The Australian Corneal Graft Registry opened in May 1985. The purpose of the Register is to collect information that will inform clinical practice and to identify risk factors for poor patient outcomes. The OTA commends the Registry and its staff for 30 years of service to the Australian eye sector.
Forgotten Flyers
Adelaide's forgotten fliers... An elderly couple's dream holiday almost ruined... Stranded at the airport and forced to buy more tickets

ICAC whistleblowers
Because we have the nations' most secretive corruption commission you'll never really know what and who they are pursuing...

Vinyl Revival
Adelaide's vinyl revival... The musical turn around that has made all those old discs new again

Memory Loss
Beating memory loss and boosting your powers of recall... You'll never forget your pin number, people's names or lose your keys again

State Care
There's been an incredible 150% increase in the number of children in emergency care. We speak with child advocate and former foster carer Rachael Titley about the emotional and economic impact.

Adelaide zoning
Adelaide's land lots rezoning... Making home owners into millionaires... Is your suburb about to hit the jackpot?

Classroom violence
Teachers are under attack as students as young as five turning violent in the classroom. Since 2011 more than 40 million dollars in compensation has been paid to stressed out teachers

SA Job Skills
Putting our job trainers out of a job... Will this be a massive government blunder? Plus the secret legal advice saying the scheme may be unlawful

Medicinal Marijuana Poll
Should the SA Government allow clinical trials for medical marijuana?

Yes 96%

No 4%

This poll has closed, there will be a new
The Australian Corneal Graft Registry contains more than 24,000 transplantation records extending over 27 years.