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## SATURDAY, 2 DECEMBER 2006

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### SYMPOSIUM 1

09:00-10:30

#### UTILITY OF GENETICS IN EYE CARE

Chair: Dr Paul Baird, Dr David Mackey

Finkel Lecture Theatre

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**09:00**    **Welcome - Dr Ian Morgan**

**Paper 1**

**09:05**    Understanding disease mechanisms in eye development  
Jamieson, R., .....3

**Paper 2**

**09:22**    Dissecting apart a complex disease - age-related macular degeneration (AMD)  
Baird, P., .....3

**Paper 3**

**09:39**    Diagnostic testing of optic nerve disease: glaucoma, LHON, and ADOA  
Hewitt, A., .....4

**Paper 4**

**09:56**    Predictive DNA testing  
Vincent, A., .....4

**Paper 5**

**10:13**    Genetic counselling issues in Retinitis Pigmentosa  
Kearns, L.S., Hewitt, A.W., Ruddle, J.R., Mackey, D.A., .....5

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### MORNING TEA

10:30-11:00

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## SATURDAY, 2 DECEMBER 2006

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### ORAL SESSION 1

11:00-12:00

#### CELLULAR AND MOLECULAR ASPECTS OF VISUAL FUNCTION

Chair: Dr David Pow

Finkel Lecture Theatre

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##### Paper 1

- 11:00 MRI investigation of the accommodative mechanism of the eye  
Kasthurirangan, S., Markwell, E., Atchison, D., Pope, J., Smith, G., .....18

##### Paper 2

- 11:10 Expression of rod-specific markers in developing human retina  
Hendrickson, A., Bumsted-O'Brien, K., Natoli, R., Provis, J., .....18

##### Paper 3

- 11:20 Development and characterization of a mouse model of glaucoma  
Holcombe, D.J., Lengefeld, N., Gole, G.A., Barnett, N.L., .....19

##### Paper 4

- 11:30 Retinal and choroidal vascular changes in VEGF transgenic models of diabetic retinopathy  
Tee, L., O'Shea, J., Lai, M., Shen, Y., Brankov, M., Penrose, M., Beazley, L., Rakoczy, P., Dunlop, S., .....19

##### Paper 5

- 11:40 Localised postreceptoral impairment in humans during hypoxia  
Feigl, B., Stewart, I., Brown, B., .....20

##### Paper 6

- 11:50 Morphological characterisation of the central foveal region in the pigeon retina  
Bumsted O'Brien, K.M., Shin, S.K., Lee, H.R., Provis, J.M., .....20
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### PLENARY 1

12:00-12:45

Chair: Prof Jonathan Stone

Finkel Lecture Theatre

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#### *Insights into the pathogenesis and management of uveitis*

Peter McCluskey .....1

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### LUNCH

12:45-14:00

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## SATURDAY, 2 DECEMBER 2006

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### SYMPOSIUM 2

14:00-15:20

#### MYTH BUSTERS 2006

Chair: Dr Ian Morgan  
Finkel Lecture Theatre

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##### Paper 1

- 14:00 Are differences in the prevalence of myopia in different ethnic groups genetic?  
Morgan, I., Rose, K., .....5

##### Paper 2

- 14:20 The repairable retina: fantasy or fact?  
Pow, D.V., Sullivan, R., WoldeMussie, E., .....6

##### Paper 3

- 14:40 A fovea helps you see better?  
Provis, J.M., Hendrickson, A.E., .....6

##### Paper 4

- 15:00 What is the role of ocular torsion?  
Cornell, E., .....7
- 

### AFTERNOON TEA

15:20-16:00

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## SATURDAY, 2 DECEMBER 2006

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ORAL SESSION 2

16:00-17:00

### VISUAL IMPAIRMENT AND CORRECTION

Chair: Dr Kathryn Rose

Finkel Lecture Theatre

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**Paper 1**

- 16:00 Contact lenses or spectacles - to be or not...  
Grupcheva, C.N., Sinclair, S., Gutstein, W., Pelino, C., Presti, P., .....21

**Paper 2**

- 16:10 Developing a global mapping low vision services survey  
Chiang, P.P-C., Keeffe, J.E., Le Mesurier, R.T.,.....21

**Paper 3**

- 16:20 Critical success factors in the utilisation of a new low vision service: the Centre for  
Vision Independence  
Mu, L., O'Connor, P., Keeffe, J., Johnson, D., Fidgeon, N., .....22

**Paper 4**

- 16:30 Barriers to accessing eye care services for people from culturally and linguistically  
diverse (CALD) backgrounds  
Lim, H.Y., Müller, A., O'Connor, P.M., Keeffe, J.E., .....22

**Paper 5**

- 16:40 Evaluating a new non-mydratic retinal camera designed to be used in developong  
countries  
Zhang, D.N., Müller, A., Koennecke, G., Keeffe, J.E.,.....23

**Paper 6**

- 16:50 Visual status and causes of visual impairment in children with low vision at Suva, Fiji  
Cama, A.T., Keeffe, J., Sikivou, B., .....23
- 

### CONFERENCE DINNER

19:00 for 19:30

#### Questacon (Science and Technology Centre)

Questacon is a 20 min walk from the conference venue. Buses to the restaurant will operate from the conference venue between 18:30-19:00. Return buses will operate between 22:30-23:00.

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## SUNDAY, 3 DECEMBER 2006

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### SYMPOSIUM 3

09:00-10:30

#### CORNEA AND LENS

Chair: Prof John McAvoy

Finkel Lecture Theatre

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##### Paper 1

09:00 Stem cells, growth factors and the ocular surface  
Harkin, D., Barnard, Z., Ainscough, L., Upton, Z., Apel, A., Schwab, I., .....7

##### Paper 2

09:18 *In vivo* confocal microscopy of the cornea - clinical and research applications  
McGhee, C.N.J., .....8

##### Paper 3

09:36 Sef: a negative regulator of FGF signalling in the lens  
Newitt, P., Lovicu, F.J., Boros, J., McAvoy, J.W., .....8

##### Paper 4

09:54 Congenital cataract: from gene discovery to molecular mechanisms  
Sharma, S., Burdon, K., Mackey, D.A., Craig, J.E., .....9

##### Paper 5

10:12 Some things get stiffer with age  
Truscott, R., .....9

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### MORNING TEA

10:30-11:00

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## SUNDAY, 3 DECEMBER 2006

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### ORAL SESSION 3

11:00-12:00

#### PSYCHOPHYSICS IN HEALTH AND DISEASE

Chair: Prof David Badcock

Finkel Lecture Theatre

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##### Paper 1

- 11:00 Temporal distinction between the development of the dorsal and ventral "stream" visual cortical areas  
Bourne, J.A., Warner, C.E., Upton, D.J., Rosa, M.G.P.,.....24

##### Paper 2

- 11:10 Psychophysically isolating on and off pathways differentiates between glaucoma and control cohorts centrally  
Sampson, G.P., McKendrick, A.M., Badcock, D.R.,.....24

##### Paper 3

- 11:20 Relationship of binocular asymmetry in HRT NFL thickness to the binocular asymmetry of HVF 24-2  
Sponsel, W.E., Sinai, M., Trigo, Y., Lindhorst, G.C.,.....25

##### Paper 4

- 11:30 Are magnocellular specific contrast sweep VEPs or psychophysical threshold to the same stimulus useful for glaucoma diagnosis?  
Zheng, J., Vaegan, .....25

##### Paper 5

- 11:40 Contrast sensitivity changes due to aging: low spatial frequency losses in both magnocellular and parvocellular pathways  
McKendrick, A.M., Sampson, G.P., Badcock, D.R.,.....26

##### Paper 6

- 11:50 Linking impulse response functions to reaction time: rod and cone reaction time data and a computational model  
Zeile, A.J., Cao, D., Pokorný, J.,.....26
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### PLENARY 2

12:00-12:45

Chair: Prof Trevor Lamb

Finkel Lecture Theatre

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#### *The visual detection of global structure*

David Badcock .....1

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### LUNCH

12:45-14:00

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## SUNDAY, 3 DECEMBER 2006

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### SYMPOSIUM 4

14:00-15:30

#### EYE AND RETINAL IMAGING

Chair: Dr Ted Maddess, Prof Rick Sponsel

Finkel Lecture Theatre

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##### Paper 1

- 14:00 Multi-conjugate adaptive optics to increase the isoplanatic field of view in retinal imaging  
Metha, A., Bedggood, P., Ashman, R., Smith, G., .....10

##### Paper 2

- 14:18 Imaging the eye using magnetic resonance imaging  
Atchison, D., .....10

##### Paper 3

- 14:36 A scanning laser ophthalmoscope for retinal imaging and stimulation  
Reinholz, F., Patterson, B.A., Lamb, T.D., .....11

##### Paper 4

- 14:54 Automated assessment of changes in the retinal fundus associated with diabetic retinopathy progression.  
Jelinek, H.F., .....11

##### Paper 5

- 15:12 Is retinal imaging useful for cardiovascular risk prediction?  
Wong, T.Y., .....12
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### AFTERNOON TEA

15:30-16:00

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## SUNDAY, 3 DECEMBER 2006

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ORAL SESSION 4

16:00-17:00

### GENETIC AND ENVIRONMENTAL FACTORS AND EYE DISEASE

Chair: Dr Krisztina Valter

Finkel Lecture Theatre

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**Paper 1**

- 16:00** The association of complement factor H polymorphism and the progression of age-related macular degeneration  
Tan, A., Longville, B., Wu, X.N., Adams, C., Rakoczy, P.E., Constable, I.J., Palmer, L.J., .....27

**Paper 2**

- 16:10** Evidence of widespread photoreceptor pathology in ageing and age-related macular degeneration (AMD)  
Shelley, E.J., Madigan, M.C., Provis, J.M., .....27

**Paper 3**

- 16:20** Large retrospective case-control study in age-related macular degeneration demographics and disease associations using record linkage  
Wu, X.N., Constable, I.J., Khan, J., Ang, A., Palmer, L.J., .....28

**Paper 4**

- 16:30** Efficacy and safety of multiple intravitreal triamcinolone injections for refractory diabetic macular oedema  
Zhu, M., Gillies, M.C., Islam, F.M.A., Larsson, J., Wong, T., .....28

**Paper 5**

- 16:40** Analysis of SNP rs3735520 upstream of the hepatocyte growth factor gene in myopia  
Veerappan, S., Pertile, K.K., Van DeBerg, R., Dirani, M., Baird, P.N., .....29

**Paper 6**

- 16:50** Myopia, near work and time spent outdoors: is time outdoors the key factor?  
Rose, K. ....29
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## SUNDAY, 3 DECEMBER 2006

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### POSTER SESSION 1

17:00-18:30

Foyer

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<b>Poster 1</b>	How different are seahorse ( <i>Hippocampus abdominalis</i> and <i>Hippocampus kuda</i> ) central retinae: foveate vs nonfoveate specialisations? Lee, H.R., Bumsted O'Brien, K.M., .....33	33
<b>Poster 2</b>	The embryonic retinal origin of the chicken rod free area centralis Shin, S.K., Bumsted O'Brien, K.,.....33	33
<b>Poster 3</b>	Electroretinography in the southern hemisphere lamprey <i>Geotria australis</i> Barnett, N.L., Collin, S.P., .....34	34
<b>Poster 4</b>	Honeybee memory: bees can schedule their activities in time and space Pahl, M., Zhu, H., Pix, W., Tautz, J., Zhang, S., .....34	34
<b>Poster 5</b>	Eye movement evaluation of signature forgeries Dyer, A., Found, B., Sita, J., Rogers, D.,.....35	35
<b>Poster 6</b>	Blood pressure control in patients with diabetes presenting at a tertiary eye clinic Wong, N., Tikellis, G., Wang, S., Wong, T.Y., Harper, A.,.....35	35
<b>Poster 7</b>	Haemoglobin A1C control in patients with diabetes presenting at a tertiary ophthalmic clinic Wang, S., Tikellis, G., Wong, N., McIntosh, R., Wong, T.Y., Harper, A., .....36	36
<b>Poster 8</b>	Effect of intravitreal triamcinolone on retinal dysfunction in early diabetic rat retina Zhang, X., Bao, S., Rapkins, R., Gillies, M., .....36	36
<b>Poster 9</b>	Is computerised contact lens fitting software useful for fitting custom rigid gas permeable lenses for keratoconus? Watters, G., Bumsted-O'Brien, K., Hanna, R., Gutnik, I., Meyer, E., Southall, C.,.....37	37
<b>Poster 10</b>	An improved primary culture method to study retinal ganglion cell toxicity Wood, J.P.M., Chidlow, G., Casson, R.J., .....37	37
<b>Poster 11</b>	Assessing the safety of AAV.sFlt-1-mediated gene therapy in a transgenic mouse model for VEGF-driven retinal neovascularisation Tang, V.H.M., Himbeck, R., Lai, M., Rakoczy, E.P., .....38	38
<b>Poster 12</b>	Novel forms of the glutamate transporter GLAST in the retina and possible implications for retinal disease Macnab, L.T., Williams, S.M., Pow, D.V., .....38	38
<b>Poster 13</b>	Evoked expression of glutamate transporter EAAT2c in ganglion cells of degenerating retinae Sullivan, R.K.P., Macnab, L.T., WoldeMussie, E., Pow, D.V., .....39	39
<b>Poster 14</b>	Temporal effects of hypoxia on the piglet retina: electrophysiology and immunohistochemistry Takamoto, K., Lingwood, B., Colditz, P., Barnett, N., .....40	40
<b>Poster 15</b>	OXR-1 in the hyperoxic C57BL/6J mouse retina Natoli, R., Provis, J., Stone, J., .....40	40
<b>Poster 16</b>	Reversal of cone function loss in the P23H-3 retina by management of ambient light Chrysostomou, V., Valter, K., Stone, J.,.....41	41
<b>Poster 17</b>	Effect of 670 nm photon therapy on the ERG of non-degenerative and degenerative retinae Kirk, D.K., Eells, J., Chrysostomou, V., Stone, J., Valter, K., .....41	41
<b>Poster 18</b>	Protective mechanisms in the retina: comparison of the protection induced by light stress and by hyperoxia Zhu, Y., Valter, K., Provis, J., Stone, J., .....42	42
<b>Poster 19</b>	Preservation of retinal vasculature and morphology in a transgenic mouse model following AAV.sFlt-1 mediated gene therapy De Pinho, M., Lai, C-M., Tee, L.B.G., Brankov, M., Dunlop, S.A.,.....42	42
<b>Poster 20</b>	Expression of osteopontin in the rat retina: effects of excitotoxic and ischemic injuries Chidlow, G., Wood, J.P.W., Casson, R.J., .....43	43

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## SUNDAY, 3 DECEMBER 2006

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<b>Poster 21</b>	Rescue of Müller cells from hyperglycaemic damage Binz, N., Eade, J.A., Mills, J., Lai, C.-M., Rakoczy, P.E., .....43
<b>Poster 22</b>	Photoreceptor activity regulates the development of inner retinal circuitry on Royal College of Surgeon's rats Di Marco, S., Giovannelli, A., Maccarone, R., Bisti, S., .....44
<b>Poster 23</b>	EAAT1 and D-serine expression in the developing human retina Diaz, C.M., Macnab, L.T., Williams, S.M., Sullivan, R.K.P., Pow, D.V., .....44
<b>Poster 24</b>	Identification of novel genes in eye development Mihelec, M., Nolen, L., Amor, D., Willcock, C., St heaps, L., Billson, F., Grigg, J., Tam, P., Peters, G., Jamieson, R., .....45
<b>Poster 25</b>	Microarray analysis of gene expression in the developing fovea Kozulin, P., Ohms, S., Natoli, R.C., Madigan, M.C., Provis, J.M., .....45
<b>Poster 26</b>	Snake toxins specific for muscarinic acetylcholine receptor sub-types confirm that M4 receptors are involved in the control of eye growth in chickens Van Rijswijk, P., McCarthy, S., Megaw, P., Morgan, I., .....46
<b>Poster 27</b>	The pattern of scleral glycosaminoglycan (sGAG) synthesis changes during develop- ment in the chick Petratckov, S.M., Maddess, T., Morgan, I.G., .....46
<b>Poster 28</b>	Atropine injections up-regulate ZENK expression - but only in retinas responding to form-deprivation Ashby, R.S., Maleszka, R., Megaw, P., Morgan, I.G., .....47
<b>Poster 29</b>	Localisation of ion channels within the choroid tissue Ashby, R.S., Walcott, B., Megaw, P., Morgan, I.G., .....47
<b>Poster 30</b>	Does the protective effect of atropine on form-deprivation induced myopia involve the dopaminergic system? McCarthy, C.S., Megawm P.L., Morgan, I.G., .....48
<b>Poster 31</b>	Dark adaptation of human rod bipolar cells Cameron, A., Lamb, T., .....48
<b>Poster 32</b>	Contrast gain control is drift rate dependent? Hietanen, M., Crowder, N., Ibbotson, M., .....49
<b>Poster 33</b>	Magnocellular specific VEP signal/noise ratios: effect of contrast, reversal rate, modulation mode, electrode montage and calculation method Vaegan,, Zheng, J., .....49
<b>Poster 34</b>	Effect of carboxymethylcellulose on corneal epithelial wound healing Garrett, Q., Xu, S., Simmons, P.A., Vehige, J., Willcox, M., .....50
<b>Poster 35</b>	Elucidation of the barrier region in the human lens Friedrich, M.G., Berry, Y., Truscott, R.J.W., .....50
<b>Poster 36</b>	Lens stiffness and biophysical changes with age Heys, K.R., Truscott, R.J.W., .....51
<b>Poster 37</b>	Mammalian lens phospholipids - humans are unique Deeley, J.M., Mitchell, T.W., Xiaojia, W., Blanksby, S.J., Truscott, R.J.W., .....51
<b>Poster 38</b>	FGFR4 expression in human uveal melanoma Cornish, E., Conway, R.M., Natoli, R., Provis, J., Madigan, M., .....52
<b>Poster 39</b>	Distribution and expression of MUC18 in human uveal melanoma Lai, K., Sharma, V., Conway, R.M., Jager, M., Madigan, M., .....52

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**STUDENT BBQ**

**18:30**

ANU, Research School of Biological Sciences Courtyard.

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## MONDAY, 4 DECEMBER 2006

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### SYMPOSIUM 5

09:00-10:30

#### RETINAL DEGENERATIONS

Chair: Prof Jonathan Stone, Dr Nigel Barnett  
Finkel Lecture Theatre

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##### Paper 1

09:00 Accelerating retinal degeneration - useful insights provided by metabolic profiling  
Kalloniatis, M., Acosta, M., Yu, S., Cheong, T., .....12

##### Paper 2

09:22 Retinal ribbon synapses and the Cav1.4 channel: insights from a New Zealand family  
Maw, M., .....13

##### Paper 3

09:45 Non-invasive treatment approaches to degenerative retinal diseases  
Valter, K., .....13

##### Paper 4

10:07 Challenges of treating retinal degenerations  
Rakoczy, E., .....14

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### MORNING TEA

10:30-11:10

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### ORAL SESSION 5

11:10-12:00

#### COMPLEX VISUAL PROCESSING

Chair: Dr Andrew Metha  
Finkel Lecture Theatre

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##### Paper 1

11:10 An audio-visual event related potential study of mobile phone use  
Maddess, T., Clunas, N., James, A., Rose, K., Morgan, I., Mitchell, P., .....30

##### Paper 2

11:20 Mechanisms encoding higher-order image statistics: an isotrigon texture based approach  
Taylor, R.R.L., Maddess, T., .....30

##### Paper 3

11:30 Efficiency of spike rate code for low contrast stimuli  
Vorobyev, M., .....31

##### Paper 4

11:40 Visual control of flight speed and height in the honeybee  
Baird, E., Srinivasan, M., Zhang, S., Lamont, R., Cowling, A., .....31

##### Paper 5

11:50 Lateralized learning performance of a visual PER task in the honeybee  
Letzkus, P., Boeddeker, N., Wood, J.T., Zhang, S.W., Srinivasan, M.V., .....32

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## MONDAY, 4 DECEMBER 2006

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### PLENARY 3

12:00-12:45

Chair: Dr Jan Provis  
Finkel Lecture Theatre

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*First steps in vision: the photoreceptor's response to light, and its recovery from light*

Trevor Lamb .....2

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### LUNCH

12:45-14:00

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### SYMPOSIUM 6

14:00-15:30

#### ELECTROPHYSIOLOGY - FROM PHOTORECEPTOR TO CORTEX

Chair: Dr Ted Maddess, Dr Alison Cameron  
Finkel Lecture Theatre

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#### Paper 1

14:00 Photoreceptor activity regulates inner retinal development  
Bisti, S., Maccarone, R., Di Marco, S., Giovannelli, A., .....14

#### Paper 2

14:13 Response recovery in mouse rod photoreceptors: effect of conditioning flashes and light steps  
Jarvinen, J.L.P., Lamb, T.D., .....15

#### Paper 3

14:26 Kinetic properties and pharmacological modulation of ionic currents of AII amacrine cells in the mouse retina  
Protti, D.A., Vonhoff, C.R., .....15

#### Paper 4

14:39 Does the subcortical visual system care about colour?  
Martin, P.R., Buzás, P., Blessing, E.M., Szmajda, B., FitzGibbon, T., .....16

#### Paper 5

14:52 The contrast dependence of phase-sensitivity in simple and complex cells: physiology and modelling  
Crowder, N.A., Van Kleef, J., Dreher, B., Ibbotson, M.R., .....16

#### Paper 6

15:05 Strengths of the visual signals affect phase-sensitivity of neurones in mammalian primary visual cortex: simple vs complex cells  
Dreher, B., Bardy, C., Wang, C., .....17

#### Paper 7

15:18 More than just LIP service to MT: how spatial attention operates in primate extrastriate cortex  
Saalmann, Y.B., Pigarev, I.N., Vidyasagar, T.R., .....17

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### AFTERNOON TEA

15:30-16:00

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### AGM - AUSTRALIAN SOCIETY FOR VISION RESEARCH

16:00-17:00

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