

COLLABORATIONS

Central Nervous System Stability and Degeneration

Collaborations with Australian Universities

Marotte LR and Flett DL with Dr CA Leamey, Department of Physiology, University of Sydney. Development of thalamocortical synapses in the somatosensory cortex of the wallaby.

Marotte LR with Dr CA Leamey Department of Physiology, University of Sydney. Role of Ten_m3 in topographic mapping.

Marotte LR with Dr CA Leamey, Department of Physiology, University of Sydney. Genes regulating cortical collicular development in the wallaby.

Marotte LR with Prof. P Waite, University of NSW. Development of somatosensory system in the wallaby.

Provis J and Natoli R with Dr M Madigan, Save Sight Institute, University of Sydney. FGFR siRNA in primary cultures of primate cone photoreceptors.

Stone J and Valter K with Dr N Barnett, University of Queensland. Electrophysiological changes in the degenerative and ageing retina.

Stone J and Valter K with Ms D van Driel, Save Sight Institute, University of Sydney. Distribution of mitochondria in mammalian retina.

Stone J and Valter K with Prof. D-Y Yu, Lions Eye Institute, Perth. Oxygen levels in the degenerative P23H rat retina.

Collaborations with Other Institutions

Provis J with Prof. AE Hendrickson, University of Washington, USA. Mechanisms of primate foveal development.

Provis J with K B O'Brien, University of Auckland, NZ. Specification of the fovea centralis.

Stone J and Valter K with Prof. S Bisti, at Università degli Studi Dell'Aquila, L'Aquila, Italy. Mechanisms of retinal neuroprotection.

Stone J and Valter K with Prof. LS Cervetto, at Università di Pisa, Italy. Mechanisms of retinal neuroprotection.

Valter K with Prof. J Eells, University of Wisconsin, Milwaukee, USA. Mechanisms of near infrared light on retinal neuroprotection.

Comparative Genomics

Collaboration within ANU

Graves JAM and Ezaz T with Dr D Rowell, BoZo. Translocation heterozygosity and meiotic chain formation in the platypus.

Graves JAM, Koina E, and Waters P with Dr D Tremethick, JCSMR. Chromatin modification and X chromosome inactivation in meiosis.

Graves JAM with Prof. J Gready, JCSMR. Evolution of prion proteins.

Collaboration with Australian Universities

Graves JAM with Prof. DW Cooper, Sch BEES, University of New South Wales. ARC Centre for Kangaroo Genomics (CI and head of gene mapping node).

Graves JAM with Dr K Nicholas, University of Melbourne. ARC Centre for Kangaroo Genomics (construction and use of EST libraries of tammar wallaby, mapping of milk genes in tammar).

Graves JAM with Prof. MB Renfree, Department of Zoology, Melbourne University. ARC Centre for Kangaroo Genomics (CI and head of function node).

Graves JAM with Dr K Zenger, Faculty of Veterinary Science, University of Sydney. ARC Centre for Kangaroo Genomics (integration of genetic and physical maps of the tammar wallaby).

Graves JAM and Ezaz T with Dr A Georges and Dr S Sarre, Environmental Science, University of Canberra. Sex determination in dragon lizards.

Graves JAM and Deakin J with Dr K Belov, Faculty of Veterinary Science, University of Sydney. Immunoglobulins and the major histocompatibility locus of marsupials and monotremes.

Graves JAM with Dr F Grutzner, School of Molecular and Biomedical Science, University of Adelaide. Platypus sex chromosomes.

Collaboration with Other Institutions

Deakin J with Dr S Beck, Sanger Centre, Cambridge, UK. Characterization of the major histocompatibility locus of the tammar wallaby.

Deakin J with Dr R Miller, New Mexico, and the opossum MHC Consortium. Characterization of marsupial immune genes.

Graves JAM, Koina E and Deakin J with Dr M Ross, Sanger Centre, Cambridge, UK. Sequencing genes on the tammar X chromosome.

Graves JAM, Rapkins R and Hore T with Dr R Nicholls, Pittsburgh, USA. Evolution of the Prader Willi-Angelman Syndrome imprinted domain.

Graves JAM, Deakin J, Wallis M, and Koina E with Prof. T Speed, Dr A Papenfuss and Dr M Wakefield, WEHI. ARC Centre for Kangaroo Genomics (PI and head of bioinformatics node). Annotation and phylogenetic footprinting of genes cloned from the tammar wallaby.

Graves JAM with Dr A Sinclair, Royal Children's Hospital, Melbourne. Sex determination in vertebrates (coauthors of forthcoming book).

Graves JAM with Dr T Ashley, Yale, New Haven Connecticut, USA. Meiosis in marsupials and monotremes.

Graves JAM and Ezaz T with Prof. S Edwards and Dr D Janes, Harvard, Boston, USA. Sex chromosomes in birds and reptiles.

Graves JAM with Dr W Just, Ulm, Germany. Sex chromosomes in *Ellobius*, a species with no Y chromosome.

Graves JAM with Dr SJ O'Brien, National Cancer Institute, Frederick, USA. Comparative genetics and genomics.

Graves JAM with Dr RJW O'Neill, Connecticut, USA. Genome instability in marsupial species hybrids.

Graves JAM with Dr W Reik and Dr A Ferguson-Smith, Cambridge, UK. Genomic imprinting in marsupials.

Graves JAM and Delbridge M with Dr H Hameister, Ulm, Germany. Evolution of the mammal X chromosome.

Graves JAM and Ezaz T with Dr MA Ferguson-Smith and Dr W Rens, Cambridge, UK. Comparative chromosome painting, evolution of marsupial and monotreme chromosomes.

Graves JAM and Koina E with Dr C Disteche, Seattle, USA. X chromosome inactivation in mouse and marsupials.

Graves JAM and Miethke P with Dr P Samollow, Southwestern University, Texas, USA. Gene mapping in the American marsupial *Monodelphis domestica*.

Graves JAM, Alsop A and Miethke P with Prof. W Warren, Washington University School of Medicine, St. Louis, MO, USA. The construction of a physical map of the platypus.

Graves JAM and Wei K-J with Dr Z Jiang, Washington State University, USA. Sequencing of platypus genome.

Alsop A and Graves JAM with Dr N Teoh, Canberra Hospital. DNA repair mechanisms in the pathogenesis of liver cancer.

Alsop A and Graves JAM with AM Pearse and S Pyecroft, Department of Primary Industries and Water, Tasmania. Cytogenetic Clues to transmission and Development of Tasmanian Devil Facial Tumour Disease.

Graves JAM with Dr R Gibbs, Baylor Genome Sequencing Center, Texas, USA. Tammar wallaby sequencing.

Environmental Biology

Collaboration within ANU

Edwards EJ and Evans JR with Dr B Loveys, EDG. The influence of elevated CO₂ and nutrient regime on leaf temperature in a C₃-C₄ plant community.

Edwards EJ with Dr B Loveys and Ball M, EDG. The effect of nocturnal warming on plant carbon gain.

Edwards EJ and Evans JR with Bruhn D and Ball M, EDG. Temperature influence on plant respiration in the field.

Edwards EJ with Ball M and Bruhn D, EDG. Temperature control of plant metabolism.

Farquhar GD, Zhou YP and Stuart-Williams H with Prof. J Chappell, RSES. Examination of environmental influences of tree-ring isotopic composition – oxygen, carbon and hydrogen isotopes.

Hobbins MT and Farquhar GD with Roderick M, EDG. Local-scale Pan Evaporation Physics and Long-Term, Large-Scale Evaporative Demand Trends.

Kirschbaum MUF, Evans JR, Farquhar GD with Bruhn D, EDG. Aerobic methane release by plants.

Roderick ML with Dr S Berry, SRES. Landscape scale carbon balances and ecological energetics.

Roderick ML with Dr B Barnes, National Centre of Epidemiology and Population Health and Mr K Mokany, BoZo. Application of theoretical modelling to plant partitioning.

Collaboration with Australian Universities

Cernusak L and Farquhar GD with Prof. JS Pate and DJ Arthur, University of Western Australia. Studies of isotope dynamics in lupins and eucalypts.

Cuntz M with V Haverd, University of Wollongong. Incorporating water and carbon isotopes in an ecosystem model.

Edwards EJ and Evans JR with Dr R Gleadow, Monash University. Effects of CO₂ and phosphorus on cyanoglucoside production in clover.

Evans JR with Dr R Gleadow and Dr P Heraud, Monash University. IR spectroscopy of leaf tissue.

Evans JR with Prof. W Stock, Edith Cowan University, Perth. Nitrogen discrimination during plant growth.

Farquhar GD, Roderick M and Cuntz M with Prof. G Paltridge, University of Tasmania, and Eugénie Crémer, Ecole Normale Supérieure, France. Maximum Entropy Production and the Earth's Climate.

Farquhar GD and Wong SC with Dr C Lambrides, School of Land and Food Sciences, University of Queensland. Stable isotopes and water-use efficiency in sunflowers.

Keitel C and Farquhar GD with Dr A Gessler INRA, Centre de Recherche de Nancy and Dr K Grice, Curtin University of Technology. Effects of climate and post-photosynthetic isotope fractionation on δ¹³C of short- and long-term carbon pools, including leaf soluble sugars, phloem, lipids, starch and leaf bulk organic matter in a *Eucalyptus delegatensis* forest.

Kirschbaum MUF, Evans J and Farquhar GD with AJ Winter, University of New South Wales. Aerobic methane release by plants.

Kirschbaum MUF with AJ Winter, University of New South Wales. Review of aerobic methane release by plants.

Masle J and Farquhar GD with Dr I Godwin and Dr C Lambrides, School of Land and Food Sciences, University of Queensland. Improving drought tolerance in canola.

Roderick ML with Mr S Schymanski and Prof. M Sivapalan, Centre for Water Research, University of Western Australia. Optimality in the soil-vegetation-atmosphere system.

Stuart-Williams H, Zhou Y-P and Farquhar GD with Dr K Grice, Curtin University of Technology. Examining the carbon and hydrogen isotopic composition of plant lipids, with a view to understanding better how the composition reflects environmental change.

Stuart-Williams H with Arafura-Timor Research Facility. Consultation on selection, installation and running of a stable isotope analysis facility.

Collaboration with Other Institutions

Buckley TN with Prof. KA Mott, Utah State University and Prof. S Long, University of Illinois. Unifying Mechanistic and Dynamic Mathematical Models of Stomatal Behaviour and Photosynthesis.

Buckley TN with Prof. DW Roberts, Montana State University and Dr N Zimmermann, ETH Zürich. Modelling subalpine forest communities in a heterogeneous landscape in Wyoming, USA.

Buckley TN with Prof. DW Roberts, Montana State University. Optimality-based analysis of tree allometry, sustainability of carbon gain, and limits to height growth.

Buckley TN with Dr A Cescatti, CEA, Trento, Italy. Testing model of

optimal leaf and canopy nitrogen distributions.

Cuntz M with Dr P Ciais, Dr G Hoffmann, LSCE, CNRS/CEA-Saclay, Gif-sur-Yvette, France, Dr P Peylin, BioMCO, CNRS/INRA/UPMC, Grignon, France, Dr RJ Francey, Dr CE Allison, DAR, CSIRO, Melbourne, Dr PP Tans, CMDL, NOAA, Boulder, Colorado, and Prof. JWC White, INSTAAR, University of Colorado. Using stable isotopes of atmospheric CO₂ to partition assimilation and respiration on continental scale.

Cuntz M with Dr G Hoffmann, Dr P Ciais, Dr P Friedlingstein and Prof. J Jouzel, LSCE, CNRS/CEASaclay, Gif-sur-Yvette, France, Dr C Weber, Dr E Maier-Reimer and K Six, MPI Meteorology, Hamburg, Germany, Prof. M Heimann, MPI Biogeochemistry, Jena, Germany, and Dr J Kaduk, University of Leicester. What drives the Dole effect? A paleo study on the link between marine sediment and Antarctic ice core records during the Pleistocene.

Cuntz M and Farquhar GD with Dr J Ogée, Ephyse, INRA, Bordeaux, Cestas, France, Dr P Peyli and, Dr T Bariac, BioMCO, CNRS/INRA/UPMC, Grignon, France, and Dr P Ciais, LSCE, CNRS/CEA-Saclay, Gif-sur-Yvette, France. Non-steady-state leaf water stable isotope enrichment; developing a unified model of the stable isotope enrichment of leaf water.

Cuntz M with Dr WJ Riley, LBL, Berkeley, California. Describing the stable isotopic composition of soil CO₂ and soil CO₂ efflux.

Cuntz M with Dr K Sturm, ANSTO. Improvement of mesoscale model of water isotopes.

Edwards EJ and Evans JR with Dr A Volder and Dr R Gifford, CSIRO Plant Industry Canberra. CRC for Greenhouse Accounting Collaboration. The effect of warming, elevated CO₂ and cutting frequency on soil and ecosystem respiration.

Edwards EJ and Evans JR with Dr A Volder and Dr R Gifford, CSIRO Plant Industry Canberra.

CRC for Greenhouse Accounting Collaboration. The effect of warming, elevated CO₂ and cutting frequency optimality-based analysis of tree allometry, sustainability of carbon gain, and limits to height growth.

Evans JR with Dr H Poorter, Utrecht University, The Netherlands. Payback time of leaves with respect to their light environment.

Evans JR with Prof. T Vogelmann, University of Vermont, USA. Light absorption and CO₂ fixation profiles through leaves.

Farquhar GD with Dr MM Barbour and Dr A Walcroft, Landcare Research, New Zealand. Isotope discrimination in tree rings.

Farquhar GD with Dr MM Barbour, Landcare Research, New Zealand, Prof. J Ehleringer, Utah, and Dr JS Roden, Southern Oregon University. Stable isotopes of oxygen in water and organic matter of trees.

Farquhar GD, with Dr J Ghashgaie and Dr G Tcherkez, Univ. Paris-XI. Intra-molecular distribution of carbon isotopes.

Farquhar GD with Dr P Franks, James Cook University and Dr R Hill, University of Adelaide. Physiology of different stomatal structures. Relationships between stomatal structure and the regulation of leaf gas exchange to help accurately translate morphology of fossil and living leaves.

Farquhar GD and Keitel C with Dr MM Barbour, Maanaki Whenua – Landcare Research, New Zealand. Linking isotope composition of phloem sap to leaf and soil respired CO₂.

Farquhar GD and Keitel C with Dr A Gessler INRA, Centre de Recherche de Nancy, France. Carbon and oxygen isotopes in the phloem sap of trees.

Farquhar GD, Wong SC and Buckley TN with Prof. T Givnish, University of Wisconsin. Integrative Plant Technology: What determines optimal stomatal conductance and allocation to leaves vs roots, and what physiological and allocational factors determine maximum tree height.

- Farquhar GD with Dr ML Roderick, CRC for Greenhouse Accounting. Pan evaporation rate and diffuse light.
- Farquhar GD, Stuart-Williams H, Keitel C and Cuntz M with Prof. A Henderson-Sellers, Dr D Stone, J Twining, Dr A Williams and Dr P Airey, ANSTO, Dr K McGuffie, University of Technology Sydney, Prof. D Griffith, University of Wollongong, Prof. M Adams, University of New South Wales, Dr R Leunig, Dr A Herczeg, Dr H Keith and Dr F Leaney, CSIRO Land and Water. Oxygen isotope composition of different water pools in the terrestrial environment.
- Farquhar GD and Dr G Tcherkez, Univ. Paris-XI. Carbon isotopes and metabolism.
- Farquhar GD and Wong SC with Dr JWH Yong, National Institute of Education Nanyang Technological University, Singapore. Cytokinin physiology.
- Farquhar GD and Wong SC with Dr R Richards, Dr A Condon and Dr G Rebetzke, CSIRO Plant Industry. Isotope discrimination and wheat performance.
- Farquhar GD, Stuart-Williams HLeQ, Keitel C and Cuntz M with Dr D Yakir, Weizmann Institute, Israel, Dr G Hoffman, LSCE, CNRS/CEA-Saclay, Prof. L. Flanagan and Prof. T. Dawson, UC Berkeley, Prof. N. Buchman, ETH Lausanne, and Dr P Aggarawal, International Atomic Energy Agency (IAEA), Cooperative Research Project, IAEA Coordinated Network, 180 in the Terrestrial Environment.
- Gilmore SR with Dr P McCarthy, Australian Biological Resource Study. Treatment of Rhizogoniaceae (Musci) for Flora of Australia.
- Hobbins MT with Dr J A Ramirez, Colorado State University, Fort Collins, Colorado, USA. Large-scale, Long-term Trends in and Dynamics of Evaporative Demand across the Conterminous United States and Australia.
- Hobbins MT with Dr TC Brown, United States Forest Service, Rocky Mountain Research Station, Fort Collins, Colorado, USA. Water Yields in the Conterminous United States under Climate Change.
- Jost, R, Berkowitz O and Masle J with Dr MR Hajirezaei, Institutue for Plant Genetics and Crop Plant Research (IPK) Gatersleben Germany. Role of carbon metabolism genes in drought tolerance.
- Keitel C and Farquhar GD with Dr A Gessler, INRA, Centre de Recherche de Nancy, France. Post photosynthetic carbon and oxygen isotope fractionation during the diurnal course and basipetal assimilate transport.
- Kirschbaum MUF, Evans JR and Farquhar GD with DM Etheridge, RM Gifford RM and KI Paul, CSIRO. Aerobic methane release by plants.
- Kirschbaum MUF with Dr RM Gifford and Dr LB Guo, CSIRO Plant Industry. Study of soil carbon and nitrogen changes after reforesting a pasture site with *Pinus radiata*.
- Kirschbaum MUF with Dr H Keith, Dr HA Cleugh, Dr R Leuning, KL Jacobsen, E van Gorsel and RJ Raison CSIRO Land and Water. Detailed study of net ecosystem carbon exchange of a temperate eucalypt forest.
- Kirschbaum MUF with Dr RC Dalal, Dr NC Mathers and Dr B Harms, Queensland Department of Natural Resources and Mines, Brisbane. Study of soil carbon and nitrogen changes after deforestation of a mulga stand.
- Kirschbaum MUF with Dr B Schlamadinger, Joanneum Research Institute, Graz, Austria, *et al.* Study of options for including biospheric carbon-management activities in a post-2012 international climate agreement.
- Kirschbaum MUF with Dr AL Cowie, Forests New South Wales, *et al.* Developing biospheric carbonaccounting options for a post 2012 commitment period under the Kyoto Protocol.
- Kirschbaum MUF with Dr J Canadell, Global Carbon Project, *et al.* Developing options for factoring out human causes of biospheric carbonstock changes for carbon accounting.
- Kirschbaum MUF with Dr G Simioni P Ritson, B Copeland, I Dumbrell and J McGrath, Forest Products Commission, Western Australia. Study of pine-forest growth in Western Australia.
- Kirschbaum MUF with D Bruhn, The Royal Veterinary and Agricultural University, Denmark, and DM Etheridge, CSIRO. Review of aerobic methane release by plants.
- Kriedemann P with I Goodwin, Senior Irrigation Scientist, Dept Primary Industries, Tatura, Victoria. Regulated deficit irrigation and partial root zone drying in grape vines.
- Masle J, Matthews P, Jost R and Berkowitz O with CIMMYT Mexico. Drought tolerance in wheat.
- Masle J with Dr D Brunel and Dr H McKhann, INRA Versailles and CNG Evry. Analysis of DNA polymorphisms associated with natural genetic diversity in *Arabidopsis* drought tolerance.
- Roderick ML and Farquhar GD with Dr L Rotstayn, CSIRO Marine and Atmospheric Research. Water availability & climate change.
- Roderick ML and Hume I with Dr T McVicar, CSIRO Land and Water. Estimating pasture productivity using satellite imagery.
- Roderick ML and Donohue R with Dr T McVicar, CSIRO Land and Water. Vegetation and catchment scale water balances.
- Stuart-Williams H and P Brooks, Stable Isotope Laboratory, University of California, Berkeley. Oxygen isotope analysis by pyrolysis.

Ecosystem Dynamics

Collaboration within ANU

Ball MC with A Leigh and Dr AB Nicotra, BoZo. Evolution of leaf shape.

Davies ID with Dr G Cary, SRES. Fire model inter-comparison study.

Roderick ML with Dr B Barnes, National Centre of Epidemiology and Population Health and Mr K Mokany, BoZo. Application of theoretical model to plant partitioning.

Roderick ML with Dr S Berry, SRES. Landscape scale carbon balances and ecological energetics.

Collaboration with Australian Universities

Ball MC with Dr B Atwell, Macquarie University. Effects of elevated CO₂ on hydraulic architecture of eucalypt seedlings.

Ball MC with MJ Canny and Prof. J Wolfe, University of New South Wales. Biophysics of freezing injury in evergreen tree seedlings.

Ball MC, Martin KC and Bruhn D with Dr CE Lovelock, University of Queensland. Effects of nutrients on structure and function of mangrove forests.

Ball MC with Dr P Ralph, University of Technology, Prof. AWD Larkum, University of Sydney, and Prof. J Wolfe, University of New South Wales. Heat stress induced photo-bleaching in corals.

Skotnicki M with Dr P Selkirk, Macquarie University. The biodiversity of subantarctic and Antarctic fungal pathogens.

Skotnicki M with Dr P Selkirk, Macquarie University. The genetic diversity and climate change response of Antarctic mosses.

Skotnicki M with Dr P Selkirk, Macquarie University. The identification, genetic diversity and

virology of subantarctic plants from Kerguelen, Heard and Macquarie Islands.

Collaboration with Other Institutions

Ball MC, Martin KC and Bruhn D with Dr CE Lovelock, University of Queensland, and Dr IC Feller, Smithsonian Institution, USA. Interactive effects of salinity and nutrients: linking physiological processes with patterns in mangrove forest structure.

Ball MC and Martin KC with S Stuart, Dr B Choat and Prof. NM Holbrook, Harvard University, USA. Effects of salinity on freeze-induced embolism in mangroves.

Ball MC with Dr MJ Hill, Bureau of Rural Sciences, Australian Government DAFF. Frost in a future climate: modelling interactive effects of warmer temperatures and rising atmospheric [CO₂] on the incidence and severity of frost damage in a temperate evergreen, *Eucalyptus pauciflora*.

Canny MJ with Dr LC Enns of Botany Department, University of Washington Seattle, and Prof. ME McCully, CSIRO Plant Industry. The development of seedling maize roots.

Canny MJ with Dr JP Sparks, Department of Ecology and Evolutionary Biology, Cornell University. The exsolution of air in pine xylem at dawn.

Davies ID with Dr J Gignoux and Dr D Hill, École Normale Supérieure, Ecologie, and Institut Supérieur d'Informatique, de Modélisation et de leurs Applications, France. General spatialised ecological simulator.

Davies ID with Dr S Lavorel, Centre d'Ecologie Fonctionnelle et Evolutive, CNRS, France. Vulnerability of Ecosystem Services to Land Use Change in Traditional Agricultural Landscapes (European VISTA project).

Davies ID with Dr GF Midgley and Dr W Thuiller, National Botanical Institute Cape Town, South Africa. Long-term movement of Fynbos and

succulent Karoo biomes of Southern Africa.

Davies ID with Dr GF Midgley, Dr W Thuiller and Dr L Hannah, Public Interest in Energy Research, USA. Effects of climate and land use change on the biota of California.

Roderick ML and Donohue R with Dr T McVicar, CSIRO Land and Water. Vegetation and catchment scale water balances.

Skotnicki M with Dr R Bargagli, University of Siena, Italy, Dr R Lewis-Smith, Dr P Convey and Dr D Walton, British Antarctic Survey, Cambridge. The genetic diversity and climate change response of Antarctic mosses.

Skotnicki M with Dr D Bergstrom, Australian Antarctic Division, Dr J Whinam, Tasmanian Parks and Wildlife, and Dr Y Frenot, University of Rennes, France. The genetic diversity and virology of subantarctic plants from Kerguelen, Heard and Macquarie Islands.

Skotnicki M with Prof. E Kitajima, University of Sao Paulo, Brazil. The molecular virology of subantarctic plants from Macquarie Island.

Genomic Interactions

Collaborations with Australian Universities

Djordjevic MA with Prof. P Gresshoff, University of Queensland. Analysis of sap from soybeans with aberrant root/shoot signalling controlling nodule meristem proliferation.

Djordjevic MA with Dr C Beveridge, University of Queensland. Analysis of sap from pea plants with aberrant root/shoot signalling controlling the proliferation of lateral shoot branching.

Djordjevic MA with Prof. C Parish and Prof. P Gresshoff, University of Queensland. Screening of biologically active molecules in angiogenesis.

Djordjevic MA, Oakes M and Zhang K with Dr P Milburn, JCSMR.

Fractionation of proteins and peptides from legume tissues.

Djordjevic MA with Dr S Djordjevic, Elizabeth McArthur Agricultural Institute, and Dr S Cordwell, Australian Proteome Analysis Facility, Macquarie University. Proteomic analysis of cell surface proteins in *Mycoplasma*.

Rolfe BG and Imin N with Prof. R J Rose, University of Newcastle. Molecular analysis of somatic embryogenesis.

Rolfe BG and Imin N with Dr BJ Carroll, University of Queensland. Investigation of function of Dem (defective embryo and meristems) proteins in *Medicago truncatula* and Tomato.

Van Noorden GE, Mathesius U and Rolfe BG with Prof. JJ Reid and Dr J Ross, University of Tasmania. Analysis of auxin in *Medicago truncatula* during nodulation.

Weiller GF, Goffard N and Djordjevic MA with Prof. P Bhalla and Prof. M Singh, University of Melbourne. Comparative analysis of Glycine max gene expression using transcriptomics and proteomics.

Weiller GF and Goffard N with Prof. P Gresshoff and Dr M Kinkema, University of Queensland. Comparative analysis of Lotus japonica gene expression using transcriptomics and proteomics.

Weiller GF and Goffard N with Dr S Kurdyukov and Prof. RJ Rose, University of Newcastle. Gene expression studies in *Medicago truncatula*

Weiller GF and Wen J with Dr P Smith, University of Sydney, Analysis of vascular micro RNAs in lupins.

Weiller GF and Frickey T with Dr C Beveridge, University Queensland. Microarray analysis of *Arabidopsis thaliana*.

Weiller GF and Frickey T, with Dr R Casu, PI, St Lucia, CSIRO, Dr C Beveridge, University Queensland). Comparative microarray analysis in plants. Comparing the right genes:

differentiating between paralogs and orthologs.

Collaborations With Other Institutions

Buer CS and Djordjevic MA with Dr G Muday, Wake Forest University, Winston-Salem, NC, USA. Flavonoid effects on plant morphology.

Frickey T with Dr E Kannenberg, Complex Carbohydrate Research Center, University of Georgia. A putative ancient lateral gene transfer between bacteria and fungi of the *Pezizomycotina subphylum*.

Frickey T with Dr F León-Galvan, Dr N Carbajal, Insitute for Scientific and Technological Research, San Luis Potosi, Mexico, and Dr L Santos University of Helsinki, Helsinki, Finland. Impact of hurricanes in the bacterial ecosystem of Bojorquez lagoon, a Cancun coastal lagoon complex.

Frickey T and Dr T Proikas-Cezanne, University Tübingen. Mutational analyses of the autophagy related WIPI-I protein.

Naora H with Prof. K Sorimachi, Dokkyo University, Medical School, Japan. Studies on nbl expression in surgically removed cancer tissues.

Rolfe BG and Chen H-C with Prof. W Dietz Bauer, Horticulture and Crop Science, Ohio. Quorum sensing mechanisms in *Sinorhizobium meliloti*

Rolfe BG and Djordjevic MA with Dr E Kondorosi and Prof. A Kondorosi, CNRS, Gif sur Yvette, France. Proteome analysis of developing nodule tissue in *Medicago*.

Rolfe BG and Djordjevic MA with Dr E Kondorosi and Prof. A Kondorosi, CNRS, Gif sur Yvette, France. Proteome analysis of developing nodule tissue in *Medicago truncatula*.

Rolfe BG, Van Noorden GE and Mathesius U with Dr J Frugoli, Clemson University, USA, and Prof. D Cook, UCLA Davis, USA. The characterisation of a supernodulation

mutant of the legume *Medicago truncatula*.

Rolfe BG and Mathesius U with Prof. W Dietz Bauer and Dr M Teplitski, Ohio State University, USA. Plant detection of quorum sensing compounds.

Weiller GF and Wen J with Prof. M Udvardi, Nobel Foundation, Oklahoma, USA. Analysis of the expression of micro RNAs and their target genes in *Medicago truncatula*.

Weiller GF with Prof. M Crespi, CNRS, Gif sur Yvette France. Analysis of non-coding RNAs in *Medicago truncatula*.

Weiller GF with Prof. P Stadler, University of Leipzig and University of Wien, Austria. Exploration of the molecular structures of miRNA target sites.

Weiller GF and Goffard N with Dr G Hernandez, Centro de Ciencias Genómicas-UNAM, Mexico. Visualisation and analysis of gene expression in *Phaseolus vulgaris*.

Weiller GF and Goffard N with Dr S Clough, University of Illinois, USA. Visualisation and analysis of gene expression in *Glycine max*.

Weiller GF and Goffard N with Prof. M Udvardi, Nobel Foundation, Oklahoma, USA and Dr L Schauser, University of Aarhus, Denmark. Visualisation and analysis of gene expression in *Lotus japonicus*.

Molecular Genetics and Evolution

Collaborations within the ANU

Campbell HD with Dr KI Matthaai, JCSMR. Mouse gene targeting and transgenesis.

Campbell HD with Prof. IG Young, JCSMR. Human and mouse homologues of invertebrate genes.

Campbell HD with Dr CA Behm, BaMBi. Molecular biology of *Caenorhabditis elegans* homologues of mammalian genes.

Grasso LC, Hayward DC, McFarlane L, Saint RB and Ball EE with Dr J Maindonald and Dr S Foret (CBIS) EST and genomic and microarray studies on the development of the coral, *Acropora millepora*.

Saint R with Dr C Vinuesa and Prof. C Goodnow, JCSMR. Analysis of the *Drosophila roqin* gene.

Saint R with Dr C Behm, BaMBi. Analysis of nematode-specific genes.

Collaborations with Australian Universities

Ball EE, Hayward DC, Grasso LC and Saint RB with Prof. DJ Miller and associates, James Cook University, Townsville. Molecular control of coral development.

Campbell HD with Dr MF Crouch, TGR BioSciences, Adelaide. Studies on mammalian genes.

Grasso LC, Hayward DC and Ball EE with Dr A Negri, Australian Institute of Marine Science. Microarray studies on coral settlement.

Saint R with Dr S Gregory, School of Molecular and Biomedical Sciences, University of Adelaide. The molecular basis of animal cell cytokinesis.

Saint R with Dr J Stow, IMB, University of Queensland. The role of Ect2 in vesicle trafficking.

Collaborations with Other Institutions

Arkell R with Dr I Ragoussis, The Wellcome Trust Centre for Human Genetics, Oxford, UK. The genetic basis of human contiguous gene deletion syndromes.

Arkell R with Dr J Flint, The Wellcome Trust Centre for Human Genetics, Oxford, UK. Mouse mutant phenotyping.

Arkell R with Dr T Zwaka, Baylor College of Medicine, Department of Molecular and Cellular Biology, Center for Cell and Gene Therapy, Houston, USA. The genetic basis of human contiguous gene deletion syndromes.

Arkell R with Dr K Millen, Department of Human Genetics, University of Chicago, Chicago, Illinois, USA. The genetic basis of human contiguous gene deletion syndromes.

Arkell R with Dr P Nolan, Mammalian Genetics Unit, MRC Harwell, Oxfordshire, UK. Mouse mutant phenotyping.

Arkell R with Dr D Norris, Mammalian Genetics Unit, MRC Harwell, Oxfordshire, UK. Zic gene function.

Arkell R with Dr K Barald, Department of Cell and Developmental Biology, University of Michigan Medical School, Ann Arbor, USA. Zic gene function.

Arkell R with Dr S Brown, University of Vermont, Burlington, Vermont, USA. Zic gene function.

Athanasopoulos V, Saint R and Vinuesa C with Dr A Barker and Prof. P Leedman. Functional studies of the Roquin family of proteins.

Ball EE and Hayward DC with Prof. NH Patel, University of California, Berkeley, USA. Molecular control of grasshopper development.

Ball EE and Hayward DC with Prof. T Bosch and associates, University of Kiel, Germany and Prof. K Agata and associates, Kyoto University, Japan. Innate immunity genes in Cnidaria.

Ball EE and Hayward DC with Prof. M Anctil, Univ of Montreal, Canada. GPCRs in coral development.

Campbell HD with Dr A Cowin and Dr B Powell, Child Health Research Institute, North Adelaide and Prof. D Roop, Baylor College of Medicine, Houston, USA. Mammalian wound healing.

Campbell HD with Prof. MR Stallcup, Department of Pathology, University of Southern California, USA. Studies on the role of FLII in mammalian cells.

Campbell HD with Dr KI Mattheai, JCSMR and Dr H Scrable, University of Virginia, USA. Regulable mouse transgenes.

de Jong DM, Hayward DC, and Ball EE with Dr J Hooper, University of Colorado, USA. Hedgehog genes in coral development.

Grasso LC, Hayward DC, Saint RB and Ball EE with Dr S Rudd, BioCity, Turku, Finland. EST and microarray analysis of coral development.

Saint R with Dr A Bejsovec, Duke University, USA. Genetic analysis of RacGAP50C function in *Drosophila*.

Saint R with Dr F Schweisguth, École Normale Supérieure, Paris, France. Pebble GEF function and Notch signalling.

Molecular Plant Physiology

Collaboration within ANU

Badger MR with Dr B Pogson, BaMBi. The ARC Centre of Excellence in Plant Energy Biology.

von Caemmerer S with Dr B Pogson and P Walters, BaMBi. Characterisation the physiology of *Arabidopsis* mutant alx8 using gas exchange and fluorescence imaging.

von Caemmerer S with A Nicotra and M Campbell, BoZo. Plasticity in stomatal and photosynthetic response to water availability in selected *Pelargonium* species.

Price GD with Dr S Howitt, BaMBi. Targeted mutagenesis of proteins involved in active CO₂ uptake in cyanobacteria.

Whitney SM with Prof. J Gready, JCSMR. Modelling Rubisco catalytic mechanisms.

Collaboration with Australian Universities

Badger MR and Pogson BJ with Prof. J Whelan, Prof. S Smith, Prof. I Small and Prof. H Millar, University of Western Australia and Prof. DA Day, University of Sydney. The ARC Centre of Excellence in Plant Energy Biology.

Badger MR and Takahashi S with Assoc. Prof. P Ralph, University of Technology, Sydney. High temperature effects on the photoinhibition of photosynthesis in *Symbiodinium* species.

Ghannoum O and von Caemmerer S with Prof. JP Conroy, University of Western Sydney, Hawkesbury. Regulation of photosynthesis by phosphorus in Australian C₃ and C₄ grasses.

von Caemmerer S, Ghannoum O, Cousins A and Dwyer S with Dr J Holtum, James Cook University, and Dr C Stokes, CSIRO. Sustainable Ecosystems, QLD.

Whitney SM with Dr R McLilley, School of Biological Sciences, University of Wollongong. Characterisation of Rubisco in dinoflagellates.

Whitney SM with Dr J Beck, School of Biological Sciences, University of Wollongong. The analysis of Rubisco activase structure by mass spectrometry.

Collaboration with Other Institutions

Badger MR with Dr RT Furbank, CSIRO Plant Industry and Professor M Tester, University of Adelaide in the development of the NCRIS initiative in Plant Phenomics funded in 2006.

Badger MR and Price GD with Dr TW Lane and Dr A Martino, SANDIA National Laboratories, USA. The structure and function of cyanobacterial carboxysome multiprotein complexes and their role in carbon sequestration in cyanobacteria.

Badger MR and Takahashi S with Prof. H Bauwe, University of Rostock, Germany. Photoinhibition processes in photorespiration mutants of *Arabidopsis thaliana*.

von Caemmerer S with Dr RT Furbank, CSIRO Plant Industry, Canberra and Prof. K Izui and Dr T Furumoto, Kyoto University, Japan.

Genetic manipulation of PEP-Carboxylase –Kinase in *Flaveria bidentis*.

von Caemmerer S with Prof. C Raines, University of Essex, UK. Role of SBPase in regulation in C₄ photosynthesis.

Price GD with Dr S Singh, CSIRO, Plant Industry and Dr N Verma, BaMBi. Targeted changes in lipid composition in cyanobacteria.

Price GD with Dr D Desai, CSIRO/CMIT, Highett, Melbourne. Development of a cyanobacterial bioreactor.

Whitney SM and Kane HJ. Full partner laboratory of the European Union Framework 5 consortium undertaking Project MARISCO (Improving arable production systems by expressing marine algal Rubisco in crop plants, Contract No. QLK3-CT-2002-01945)

Whitney SM with Dr I Matsumura and D Greene, Department of Biochemistry, Emory School of Medicine, Georgia, USA. Directed evolution of Rubisco in *Escherichia coli*.

von Caemmerer S with Dr RT Furbank, CSIRO Plant Industry, Canberra and Prof. K Izui and Dr T Furumoto, Kyoto University, Japan. Genetic manipulation of PEP-Carboxylase –Kinase in *Flaveria bidentis*.

von Caemmerer S with Prof. C Raines, University of Essex, UK. Role of SBPase in regulation in C₄ photosynthesis.

Whitney SM with Dr D Kubien, Department of Biology, University of New Brunswick, Canada. Kinetic characterisation of Rubisco from *Flaveria* species.

Photobioenergetics

Collaboration within ANU

Chow WS with Dr B Pogson, BaMBi. Elucidating the interactions between drought tolerance and photoprotection in plants.

Chow WS with Dr L Hendrickson, MPP. Cyclic electron flow around Photosystem I in leaves.

Chow WS with Dr P Smith and Dr R Pace, Department of Chemistry. Determination of the stoichiometry of the two photosystems in spinach chloroplasts.

Fernandez-Velasco JG with Dr G Burgess and Prof. K Lovegrove, CSES. Technoeconomical analysis for the design and operation of a photobioreactor for large-scale hydrogen production by microalgal photosynthesis.

Fernandez-Velasco JG with Mr M Talent and Prof. K Lovegrove, CSES. Extracting oil from microalgae.

Hillier W and Wydrzynski T with Prof. E Krausz, Research School of Chemistry. The mechanism of water splitting in photosynthesis.

Wydrzynski T and Hillier W with Dr R Pace, Department of Chemistry, and Prof. E Krausz, Research School of Chemistry. Spectroscopy of purified Photosystem II from higher plants and cyanobacteria.

Collaboration with Australian Universities

Chow WS and Prof. AB Hope, School of Biological Sciences, Flinders University. Photosynthetic electron transfers in leaves.

Collaboration with Other Institutions

Chow WS with Dr D-Y Fan, Department of Photosynthesis, Institute of Botany, Chinese Academy of Sciences, China. Electron fluxes through Photosystem I in leaves.

Chow WS with Mr P Losciale and Prof. LC Grappadelli, University of Bologna. High-light stress in nectarine leaves under field conditions.

Chow WS with Dr A Ivanov and Prof. PV Sane, Department of Biology, University of Western Ontario. Dissipation of energy in

photoinactivated Photosystem II reaction centres.

Chow WS and Oguchi R with Prof. I Terashima, Department of Biological Sciences, University of Tokyo. Photoinactivation of Photosystem II in intact plants.

Hillier W with Dr A Boussac, Department of Bioenergetics, CEA Saclay, France. Inorganic Ca and Sr mutants of *Thermosynechococcus elongatus*.

Hillier W with Prof. RJ Debus, Department of Biochemistry, University of California at Riverside, USA. Fourier Transform Infra Red measurements on mutants of Photosystem II.

Hillier W with Prof. S Furguson-Miller, Department of Chemistry and Biochemistry, Michigan State University, USA. Catalytic steps in the oxygen reduction mechanism of cytochrome c oxidase.

Hillier W with Dr J Messinger, Max-Planck Institute for Bioinorganic Chemistry, Mulheim, Germany. Mass spectrometric measurement of oxygen.

Kim EH, Anderson JM and Chow WS with Prof. P Horton, Department of Molecular Biology and Biotechnology, University of Sheffield, England and Prof. S Jansson, Department of Plant Physiology, University of Umeå, Sweden. Structure/function relationship in *Arabidopsis* mutants lacking the main light-harvesting antenna of Photosystem II.

Kim EH, Anderson JM and Chow WS with Prof. K Niyogi, University of California at Berkeley. Chloroplast structure in an *Arabidopsis* mutant lacking the major light-harvesting pigment-protein complexes.

Wydrzynski T and Conlon B with Prof. PL Dutton, Department of Biochemistry and Biophysics, University of Pennsylvania, USA. Design and synthesis of photoactive peptides based on photosynthetic reaction centres.

Wydrzynski T with Dr J Eaton-Rye, Department of Biochemistry, University of Otago, NZ. Analysis of Photosystem II in cyanobacterial mutants.

Wydrzynski T and Conlon B with Prof. W Lubitz and Dr J Messinger, Max Planck Institute for Bioorganic Chemistry, Mulheim, Germany. EPR measurements of manganese in engineered light-activated proteins.

Wydrzynski T with Prof. GC Dismukes, Department of Chemistry, Princeton University, USA, and Prof. VV Klimov, Institute for Basic Biological Problems, Russian Academy of Sciences. The origin of oxygen on earth – the innovation and evolution of photosynthetic water oxidation.

Plant Cell Biology

Collaboration within ANU

Rouse DT with R Peakall, BoZo. Collection of pseudo-copulating orchid species.

Williamson RE with S Kalyanasundaram, Department of Engineering. Predicting cell wall mechanics from structure in a materials engineering approach to plant growth.

Collaboration with Australian Universities

Blackman LM and Collings DA with Dr C Faulkner and Prof. RL Overall, University of Sydney. Tropomyosin antibodies co-localise with actin microfilaments and label plasmodesmata.

Blackman LM and Collings DA with Prof. RL Overall and C Faulkner, University of Sydney. Analysis of GGA proteins in plants.

Blackman LM with Dr JDI Harper, Charles Sturt University, Prof. RL Overall and Dr J Marc, University of Sydney. Characterisation of centrin in higher plants.

Collings DA with Dr G Ash and Dr JDI Harper, Charles Sturt University. Characterisation of the organisation

and dynamics of peroxisomes during cell division in *Allium* species and other plants.

Collings DA with Dr L Cole and Prof. RL Overall, University of Sydney. Cell-to-cell communication through tobacco leaf trichomes via the lumen of the endoplasmic reticulum and the desmotubule in plasmodesmata.

Collings DA with Dr DW McCurdy, University of Newcastle. Gene expression during the latrunculin hypersensitization response in the *Arabidopsis mor1* mutant.

Hardham AR and Blackman LM with Dr JDI Harper, Charles Sturt University. Centrin and other flagellar proteins in the Oomycetes.

John PCL with Prof. J Hamill, Monash University. Cell cycle control in the initiation of lateral root primordia.

Jones DA with Dr P Anderson, Flinders University. Subcellular localisation of the flax M resistance protein.

Jones DA and Lim GTT with Dr BJ Carroll, University of Queensland. Isolation of the tomato *I-3* gene for resistance to the wilt pathogen *Fusarium oxysporum* pv. *lycopersici*.

Collaboration with Other Insitutions

Collings DA with Ms E Kawamura and Prof. GO Wasteneys, University of British Columbia, Vancouver, BC, Canada. The microfilament and microtubule cytoskeleton in *Arabidopsis* root growth.

Collings DA with Dr R White, CSIRO Plant Industry. Do transient expression studies in *Allium* epidermis always tell the truth?

Hardham AR with Dr JDI Harper, Charles Sturt University and Dr K Lehtreck, University of Massachusetts Medical School, Worcester, MA, USA. Striated fibre assembling in the Stramenopiles.

John PCL with Prof. BG Forde, University of Lancaster, Lancaster UK. Hormonal and nutritional effects

in the initiation of lateral root primordia.

John PCL with Prof. D Inzé, University of Gent, Belgium. Location and activity of plant cyclin dependent kinases.

John PCL with Prof. TI Baskin, University of Massachusetts, Amherst, USA. Modulation of meristem action by cell cycle transgenes.

Jones DA with Dr Y-L Bai and Prof. RGF Visser, Wageningen University and Research Centre, Wageningen, The Netherlands. Testing tomato breeding lines resistant to *Oidium neolyopersici* for resistance to powdery mildew caused by *O. lycopersici*.

Jones DA with Dr P Dodds and Dr JG Ellis, CSIRO Plant Industry. Subcellular localisation of the flax L6 and M resistance proteins.

Jones DA and Baillie BK with Dr A Beccera and Dr D Llewellyn, CSIRO Plant Industry. Testing the tomato *I-2* gene conferring fusarium wilt resistance for the ability to confer fusarium wilt resistance in cotton.

Jones DA and Chakrabarti A with Dr L Buhot and Prof. JDG Jones, Sainsbury Laboratory, John Innes Centre, Norwich, UK. Mutational analysis of the tomato Cf-9 resistance protein.

Jones DA and Chakrabarti A with Dr MHAJ Joosten and Prof. PJGM de Wit, Wageningen University and Research Centre, Wageningen, The Netherlands. Purification and identification of a *Nicotiana benthamiana* protein able to elicit necrosis in tobacco plants expressing the tomato Cf-9B resistance protein and mutational analysis of the tomato Cf-9 resistance protein.

Jones DA and Lim GTT with Prof. M Bouzyen, Ecole Nationale Supérieure Agronomique de Toulouse (ENSAT)/ Institut National Polytechnique de Toulouse (INPT), Toulouse, France. The tomato chromosome 7 sequencing project and production of transgenic tomato plants silenced for receptor-like kinase genes.

Jones DA and Lim GTT with Mr DJ McGrath, Queensland Department of Primary Industries and Fisheries. Isolation of the tomato *I-3* gene for resistance to the wilt pathogen *Fusarium oxysporum* f. sp. *lycopersici*.

Jones DA and Lim GTT with Assoc. Prof. G-P Wang, College of Horticulture, South China Agricultural University, Guangzhou, China. SSR marker development for tomato breeding.

Rouse D with Mr DL Jones, Centre for Plant Biodiversity Research, Australian National Herbarium, Canberra. Studies of *Prasophyllum* R.Br. (Orchidaceae) in south-eastern Australia.

Williamson RE with Prof. L Faye, University of Rouen, France. Changes in N-glycosylation in *Arabidopsis* mutants.

Williamson RE and Howles PA with Dr T Arioli, Bayer CropScience. Functioning of *CesA* *in vivo*.

Visual Science

Collaboration within ANU

Hemmi JM with Prof. A Cockburn, Dr P Cooper, BoZo. Plumage colouration in fairy wrens.

Hemmi JM and Zeil J with Dr U Zimmer, Faculty of Engineering and Information Technology. Nonlinear time series analysis of crab anti-predator responses.

James AC with Dr G Stuart, JCSMR. The role of feedback in cortical circuitry.

James AC with Dr H Gardner, Dept Computer Science, FEIT. Neurofeedback and the Mind-Attention Interface.

James AC with Prof. A Snyder, Centre for the Mind, RSPHySE. Unconscious processes in human cognition.

Maddess T with Dr I Goldberg, University of NSW. A twelve year retrospective study of the use

of contrast thresholds of spatial frequency doubling stimuli to predict glaucomatous.

Maddess T, James AC and Morgan IG with Dr N Clunas, Dr K Rose University of Sydney, and Dr P Mitchell, Westmead Millennium Institute. An audio-visual event related potential study of mobile phone use.

Maddess T and Morgan IG with Dr K Rose, University of Sydney. Monitoring eye growth using the AL/CR index.

Reinhard J, Claudianos C, and Srinivasan M, with Dr U Mathesius, and Dr C Behm, BamBi, and Dr R Rickards, Research School of Chemistry. Olfactory pattern recognition in insects and nematodes.

Srinivasan MV, Lamont R and Snowball M with Dr C Brack, Forestry. Design and development of *Panotree*: an instrument for remote measurement of tree ranges and girths.

Walcott B with Dr I Morgan, RSBS. Role of ion channels and transporters in myopia.

Walcott B with Dr P Brink and Dr L Moore, University at Stony Brook Medical School, USA. Mechanisms of fluid flow in lacrimal glands.

Zeil J and Hemmi JM with Dr P Backwell, BoZo. The meaning of colour in fiddler crabs.

Zeil J and Hemmi JM with Dr P Backwell, BoZo. Movement based signals in fiddler crabs.

Zhang SW and Srinivasan with Dr T Senden, RSPHySE and Dr Ribi W University of Lichtenstein. Anatomy project and evaluation of volume of bees' brains.

Collaborations with Australian Universities

Claudianos C, Reinhard J, Srinivasan M and Behm C with C Warr, Monash University. Olfactory pattern recognition in insects and nematodes.

Hemmi JM with Dr M Vorobyev, University of Queensland. Behavioural

spectral sensitivity in the tammar wallaby.

Hemmi JM, Pix W and Zeil J with Prof. J Marshall & Dr M Vorobyev, University of Queensland. Body colours in fiddler crabs.

Ibbotson M with Dr CWG Clifford and Prof. B Dreher, University of Sydney. Processing in the visual cortex.

Maddess T with Dr I Goldberg, University of NSW. A twelve year retrospective study of the use of contrast thresholds of spatial frequency doubling stimuli to predict glaucomatous.

Maleszka R with Dr B Oldroyd, University of Sydney. The genetics of social regulation of reproduction in honey bees.

Peters R with Assoc. Prof. C Evans, Centre for Integrative Study of Animal Behaviour, Macquarie University. Signal design in lizards.

Srinivasan MV with Prof. R Jarvis, Monash University, Dr R Kotagiri, University of Melbourne and Dr S Venkatesh, Curtin University. Centre for Perceptive and Intelligent Machines in Complex Environments.

Srinivasan MV with Prof. S Venkatesh, Prof. GA West, Dr T Tan and Dr MM Lazarescu, Curtin University. Surveillance Systems for the Transport Industry (ARC Linkage Project).

Zeil J and Ball M with Assoc. Prof. J Marshall and others, University of Queensland. Prawns in Space (ARC Linkage Project).

Zeil J and Hemmi JM with Assoc. Prof. J Marshall, Dr S Kleinlogel and Dr M Vorobiev, University of Queensland. Spectral sensitivities of fiddler crab photoreceptors.

Zeil J with Dr M Vorobyev, University of Queensland. Spatial statistics of hyperspectral images.

Collaborations with Other Institutions

Barron AB and Maleszka R with Prof. A Mercer, University of Otago, NZ. Identification and localisation of neurochemical receptors in the honey bee brain.

Claudianos C with Dr J Oakeshott, CSIRO Entomology, Prof. R Feyereisen, INRA France, Dr H Ranson, University of Liverpool, UK, and Prof. M Berenbaum, University of Illinois, USA. Genome studies concerning principle enzyme families (GSTs, P450s, COEs) responsible for metabolic resistance to insecticides.

Claudianos C with Dr H Dessens London School of Hygiene & Tropical Medicine, London, UK. Genes that modulate host/parasite interactions in malaria.

Hemmi JM and Provis J with Prof. S Deeb, University of Washington, USA. The identity of cone opsins in the tammar wallaby.

Hemmi JM with Dr D Guez, State University of New York, USA. Visual learning in the tammar wallaby.

Ibbotson M with Dr MJ Mustari, Yerkes National Primate Research Center, Emory University, Atlanta, USA. Primate visual cortex.

James AC with Dr S Vanni, Brain Research Institute, Helsinki University of Technology, Finland. Multifocal fMRI and MEG functional imaging of human visual cortex.

James AC and Maddess T with Seeing Machines, Canberra. Application of multifocal pupillography in medical diagnostics.

Maddess T with Prof. Y Nagai, Kokushikan University, Tokyo, Japan and Prof. JD Victor Weill, Medical College of Cornell University, New York, USA. Binary and ternary textures containing higher order spatial correlations.

Maddess T with Dr T Caetano of NICTA. Texture generation by random Markov fields.

Maleszka R with Prof. G Robinson, University of Illinois at Urbana-Champaign. The role of methylation in gene expression in the honey bee.

Morgan IG with Prof. L Ellwein, National Eye Institute, Washington and World Health Organisation. Analysis of data from the Refractive Error in School Children surveys.

Morgan IG with Prof. M He, Department of Ophthalmology, Zhongshan Ophthalmic Institute, Guangzhou, China. Clinical trial on prevention of myopia using myopic defocus

Morgan IG with Dr SM Saw, Singapore Eye Research Institute, Singapore. Analysis of genetic associations with myopia in Singaporean school children.

Morgan IG with Prof. D Tan, Dr WH Chua and Dr A Chia, Singapore Eye Research Institute, Singapore. Clinical trial on prevention of myopia with monocular myopic defocus.

Peters R with Dr T Ord, University of California, Davis, USA. Signal design and motion vision ecology.

Srinivasan MV with Dr T Labhart, University of Zürich, Switzerland. Investigation of mechanisms of polarised-light navigation in the honeybee.

Srinivasan MV with Dr M Dacke, University of Lund, Sweden. Investigation of 'cognitive' processes in honeybees.

Srinivasan MV with Prof. D Floreano, Ecole Polytechnique Federale de Lausanne, Switzerland. Biologically inspired robotics.

Vidovic M with Dr A Nighorn, The University of Arizona. Program in Neuroscience and Arizona Research Laboratories Division of Neurobiology.

Zeil J with Dr N Boedekker and Prof. M Egelhaaf, University of Bielefeld. Reconstruction of natural optic flow.

Zeil J with Prof. D Stavenga, University of Groningen. Optics of fiddler crab eyes.

Zeil J with Prof. J Zanker, Royal Holloway, England. Motion vision ecology.

Zeil J and Maleszka R with Prof. S Deeb, University of Washington. The visual pigment genes of fiddler crabs.

Zhang SW and Srinivasan MV with Prof. W Ribi, University of Liechtenstein. Neuroanatomy of learning and memory in the honeybee.

Zhang SW with Prof. J Lai and Mrs M Burgess, ADFA. Investigation of honeybee memory: noise interfering learning and memory in honeybees.

Zhang SW with Dr J Tautz, Dr H J Gross, Mr M Pahl, Bio-Zentrum of Wuerzburg University and RSBS with Dr A Si. Examination of cognitive ability in the honeybee: Can honeybees count the number of objects?

Zhang SW with Prof. S Su and Prof. SL Chen, College of Animal Science, Zhe-Jiang University. Honeybee vision: honeybees are able to use visual cues only on homing trip and non-destructive genotyping and genetic determination of a specific behaviour in a honeybee colony.

Zhang SW with Prof. RS Chen and Prof. L Liu, State Key Laboratory of Brain and Cognitive Science, Institute of Biophysics, Chinese Academy of Sciences. Investigation of the functions of non-coding RNAs in *Drosophila* and honeybees.

Zhang SW with Prof. YY Ma, Kunming Institute of Zoology, Chinese Academy of Sciences. Investigation of the honeybee learning and memory and potential applications in the detection of specific chemicals.

Zhang SW with Prof. C Run-Sheng and Prof. L Li, State Key Laboratory of Brain and Cognitive Science, Institute of Biophysics, Chinese Academy of Sciences. Investigation

of the functions of non-coding RNAs in *Drosophila* and honeybees.

Zhang SW and Srinivasan MV with Dr Senden T, RSPHySE, and Prof. W Ribi, University of Liechtenstein. Investigation of learning and memory in the honeybee: task-dependent brain development.

Electron Microscopy Unit

Collaborations within ANU

Brink FJ, Visiting Fellow at Research School of Chemistry, with Prof. R Withers, Research School of chemistry. Oxygen and fluorine ordering in metal oxyfluorides.

Collaborations with Australian Universities

ANUEMU facilities are used by visitors to many departments of the ANU. In addition, they were used by staff and research students from Canberra Institute of Technology, Charles Sturt University, ADFA, James Cook University, University of Western Sydney, and the University of Melbourne.

Collaborations with Other Institutions

Brink FJ, Stowe SJ with Prof. Saeed Asgary, Assoc. Prof. M Parirokh and Assoc. Prof. J Eghbal, Endodontic Department, Dental School, Shahid Behesti University of Medical Sciences, Tehran, Iran and Kerman University of Medical Sciences, Kerman, Iran. Analysis of endodontic materials and procedures.

Cheng CX with Prof. Margaret McCully, CSIRO Plant Industry. Cryo-SEM of plant-soil interactions.

Stowe S with Prof. Nicholas Strausfeld, University of Arizona, USA and Dr David Rowell, BoZo. Onychorophoran neuroanatomy and phylogeny.

Stowe S and Aung S, with Prof. D Stavenga, University of Groningen,

Netherlands. Optically active microstructure of lepidopteran cuticle.