

**RESEARCH EXPERTISE list for the School of Biological Sciences March 2010.**

For anyone involved in scientific research, advice is available in the following areas from the colleagues within the School of Biological Sciences

**Table 2 lists full names and email addresses in alphabetical order of 4 letter code). Please arrange an appointment with the expert by email.**

**TABLE 1** Areas of expertise

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<b>Analytical methods for:</b>	
amino acids, pigments, proteins, organic acids, sugars	CWAR
Animal restraints	EMAY
Animal surgery	FSEE
Australian bird identification	AGRA
Autoradiography	JSAL, MTHO
Behavioural analysis and observations	GSWO, JBUH, RCOL, SSIM
Biochemistry (including cell-cell interactions)	AGRA, MTHO
Biophysical modelling	FSEE, RRIT
Blue-green algae	RRIT
Captive marsupial herbivore care	CMCA
Cell signals	AGRA, MTHO
Chromatography (ion exchange, paper etc.)	AGRA, MTHO
<b>Computational Modelling Techniques</b>	JBUH
Simulation modelling	WFIG
Data manipulation automation (macros)	WFIG
<b>Computer Programming Languages</b>	
C++	JBUH
MATLAB	JBUH
Perl	JBUH
<b>Computer software</b>	
MATLAB	JBUH
Video tracking	JBUH
<b>Culture techniques</b>	
algae	RRIT
animal cell culture	AGRA, MTHO
fungus cells	PMCG
mammalian cells	AGRA
organ culture	MTHO
plant cell culture	JMAR, JSAL
DNA transformation of fungi	JSAL

Electrophysiology	SSIM
<b>Electrophoresis</b>	
agarose gel	HKRA
capillary electrophoresis	CWAR
PAGE	HKRA, JMAR, JSAL, MTHO, PMSM
electrophoretic computer image analysis	MTHO
Entomology	FCLI, GSWO, SSIM
Enzyme assays	AGRA, MTHO
Experimental design and analysis	RCOL
Fluorescent molecules	ALAR
Fluorimetry	AGRA
<b>Food consumption measurement</b>	
in small marsupials	EMAY
diet and foraging	CMCA, FCLI
food consumption	CMCA, FCLI
feeding trials	CMCA, FCLI
diet selection indices	CMCA
Fruit bats and flying foxes	KPAR
<b>Fungi</b> ecology and taxonomy	ANNE
Fungi Extraction of DNA	ANNE
Fungi isolation, culture and manipulation of fungi, (especially fungi associated with plants)	ANNE, PMCG
Gas chromatography	CWAR
Glasshouse plant growth (methods/media design)	CNEW, FCLI
Gene gun/particle bombardment	JMAR
Green Fluorescent Protein technology	JMAR
growing native plants (esp. tree species)	CWAR
Immunoassays	MTHO
Invertebrate field collection	HSOW
Membrane transport	RRIT
<b>Microscopy</b>	
immunofluorescence	JMAR, MTHO
light microscopy	FCLI, JMAR, MRIC, MTHO
Scanning electron microscopy	MTHO
<b>Molecular biology</b> techniques,	HKRA, JMAR, JSAL, PMSM
gene hybridization	JSAL

mutation detection in DNA	JSAL
nucleic acid hybridisation	PMSM
Oxygen electrodes	ALAR, RRIT
Oxidative damage	AGRA
<b>Photography</b>	MRIC
photomicrography	JMAR, MRIC
photoshop	MRIC
Photosynthesis of algae	ALAR, RRIT
Crassulacean Acid Metabolism (photosynthesis found in Cacti, Orchids and Bromeliads).	RRIT
Photosynthesis of terrestrial plants	CWAR, RRIT
Phylogeography / population genetics	GSWOR
Plant chemical analyses	
plant nutrients: cell wall components, 2° metabolites, macronutrients	CMCA, FCLI, RRIT CMCA, FCLI
Plant field collection	CNEW
Plant pigment analysis	ALAR, RRIT
Plant transformation	PMSM
Poster making	MRIC
Propagation and maintenance of plants	CNEW
<b>Protein</b> assays	AGRA
Protein phosphorylation	MTHO
Protein purification	AGRA, JMAR, MTHO
Scanning images	MRIC
Scintillation counting	AGRA, RRIT
Shielded thermocouples	EMAY
Stable isotope methods (esp. C & N)	CWAR
Taxonomy of Sydney invertebrates	HSOW
Taxonomy of Sydney native plants	CNEW
Techniques in nutritional biology	FCLI, SSIM
Telemetry (temperature, heart rate)	FSEE
Thermal biology	FSEE
<b>Trapping</b> – small mammals	CMCA
Use of radioactive tracers	AGRA, MTHO
Video imaging of agarose gels,	HKRA
Western blots	HKRA, JMAR, MTHO, PMSM
<b>Writing</b>	
advice on writing a grant application	RSHI
scientific writing	EMAY
theses	EMAY

**TABLE 2**

**Full names and email addresses** (in alphabetical order using the above four letter code)

AGRA	Dr. Adrienne Grant	adrienne.grant@sydney.edu.au
ALAR	Emer. Prof. Tony Larkum	alark@bio.usyd.edu.au
ANNE	Dr. Anne-Laure Markovina;	anne-laure.markovina@bio.usyd.edu.au
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RCOL	Assoc. Prof. Ross Coleman	rcoleman@usyd.edu.au
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WFIG	Dr. Will Figueira	will.figueira@sydney.edu.au

\*\*\*\* Please advise AGRA of any changes