

## President

Prof. David Adams  
The University of Queensland  
president@aupps.org.au

## National Secretary

A/Prof. J.W. Lynch  
The University of Queensland  
secretary@aupps.org.au

## Treasurer

Prof. Stefan Bröer  
The Australian National  
University  
treasurer@aupps.org.au

## Editor

Dr A. Dinudom  
The University of Sydney  
editor@aupps.org.au

## Webmaster

A/Prof. Derek Laver  
The University of Newcastle  
webmaster@aupps.org.au

## IT Manager

Hon A/Prof. Dave Davey  
D'Entrecasteaux  
378 Manuka Road  
Kettering TAS 7155  
ITmanager@aupps.org.au

## Associate Editor

Dr. Simon Potocnik  
RMIT University  
newsletter@aupps.org.au

## Student Representative

Mr. S. Gehrig  
The University of Melbourne  
s.gehrig@pgrad.unimelb.edu.au

## Councillors

Dr. Livia Hool  
The University of Western  
Australia  
lhool@cyllene.uwa.edu.au  
A/Prof. Lea Delbridge  
The University of Melbourne  
lmd@unimelb.edu.au  
Dr Kate Murphy  
The University of Melbourne  
ktmurphy@unimelb.edu.au  
Dr. Guiseppe Posterino  
The University of Adelaide  
giuseppe.posterino@adelaide.  
edu.au  
Dr. Jamie Vandenberg  
Victor Chang Cardiac Research  
Institute  
j.vandenberg@victorchang.un  
sw.edu.au

## Public Officer

Prof. Graham Lamb  
La Trobe University  
g.lamb@latrobe.edu.au



## President's Report

Planning is underway by the Local Organising Committee chaired by Professor Roger Dampney, University of Sydney, for "ANS-AuPS 2010: 30<sup>th</sup> Annual Meeting of the Australian Neuroscience Society, in conjunction with the 50<sup>th</sup> Anniversary Meeting of the Australian Physiological Society" to be held in Sydney in January 31 – February 3, 2010. A joint planning meeting attended by AuPS representatives Trevor Lewis, Jamie Vandenberg, Roger Dampney and myself was held on 5<sup>th</sup> March to discuss the budget, deadlines, registration etc. and the web site for the meeting should be live by early June. Livia Hool, UWA, has called for suggested symposia and received 5 which are all inclusive of ANS, so if you have further suggestions please contact her ([lhool@cyllene.uwa.edu.au](mailto:lhool@cyllene.uwa.edu.au)) before the end of April.

Members can still register to attend the 36th International Congress of Physiological Sciences (IUPS) which will take place in Kyoto, Japan July 27 - August 1, 2009. Early registration closes 17<sup>th</sup> April and information with regard to the program is available on the website <http://www.iups2009.com/>. Among the numerous invited lectures at IUPS, a Special Lecture will be given by AuPS Treasurer, Professor Stefan Broer, ANU.

Dr. Jack Carmody, an Honorary Member of AuPS, represented AuPS at Science meets Parliament held 17<sup>th</sup> March. Professor Penny Sackett, Chief Scientist, was the keynote speaker and her speech on the state of climate science and implications and options for policy makers is on the FASTS website (<http://www.fastso.org>). In due course FASTS will also have available a transcript of the forum on strategic leadership in science with Penny Sackett, Mary O'Kane, Megan Clark and Susan Greenfield.

Senator Kim Carr, Minister for Innovation, Industry, Science and Research, responded to the Cutler and Bradley reviews on higher education research on the 5<sup>th</sup> March indicating that the Government was looking at research funding mechanisms and rejuvenating the research workforce. He emphasized that the Excellence in Research for Australia (ERA) would be important for resource allocation and is determined to "see it fully operational sooner rather than later". He also stated that "funding for research must be based on demonstrated excellence and clear priorities that take into account national needs, individual curiosity, institutional capabilities, and the resources available". With regard to the adequacy and design of research funding in the higher education sector, he stated that "the current model does not address the real costs of research, does not encourage collaboration, and does not equip us to meet emerging needs. Research funding must be strategically targeted and sustainable. It must help us build critical mass and maximise returns on our investment – not least by concentrating resources on the things we are best at – as institutions, and as a nation." Senator Carr also referred to the issue of addressing the full costs of research and increasing the value and duration of APA stipends. Given the present economic climate and significant budgetary constraints it will be of interest to see how effectively the Government will respond to the Cutler and Bradley reviews.

Finally, the AuPS Council will hold an extraordinary meeting in Sydney 11<sup>th</sup> June and we would appreciate any feedback with regard to the Society, its meetings and future directions. At the Annual General Meeting in December we approved 59 new ordinary and student members of AuPS and I look forward to a similar increase in our membership in 2009. We would also welcome nominations for Honorary Membership of the Society.

**Thank you for your continued membership in AuPS!**  
**David Adams** **President, AuPS**

## Telemetry Blood Pressure, Biopotential and Nerve Recordings

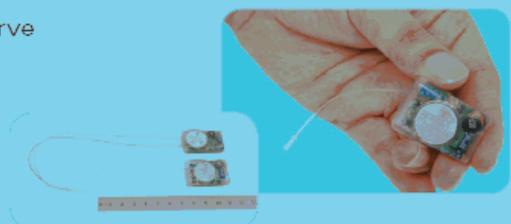
### Wireless Small & Large Animal Systems

**ADInstruments Telemetry Advantages:**

- PowerLab and LabChart software for long-term recordings
- Blood Pressure and ECG analysis Modules for fast, easy online and offline analysis
- Schedule recordings from minutes to days
- Multi-signal recordings:- blood pressure, biopotentials, nerve activity, temperature
- Co-house animals (independent transmission frequencies)

**TR Transmitter Features:**

- ⦿ For use in animals >200 gm
- ⦿ Wireless fully implantable transmitter
- ⦿ Single or dual signal transmitters
- ⦿ Independent transmission frequencies
- ⦿ Can record 24/7 (small transmitter)
- ⦿ No battery refurbishment or replacement
- ⦿ Battery recharged while still implanted
- ⦿ Transmission range up to 5 m

Transmitter type	Small	Large
Animal Weight Range	>200 g	>1.5 kg
Weight	13 g	68 g
Dimensions	35 x 9 x 23 mm	68 x 15 x 42 mm



**ADINSTRUMENTS.com**

## Workshops

### **ADInstruments Free Workshop Series for Researchers and Educators**

ADInstruments is running a series of free half-day workshops that will focus on PowerLab data acquisition software packages: **LabTutor, LabAuthor and LabChart.**

During the workshop educators will gain a thorough understanding of the innovative LabTutor program that introduces students to physiological concepts. LabTutor integrates experiment information, data acquisition and students reports within one program. Participants will also be shown the authoring tool, LabAuthor, which allows you to create and modify LabTutor experiments.

For researchers, there will be a demonstration of new features in LabChart 7 including the Scope View and Welcome Center, as well as a review of the software's time-saving features that can increase proficiency in the lab.

### **PowerLab Workshop Schedule**

Half-day workshops will be held throughout Australia and New Zealand in 2009 as follows:

April: **Melbourne: May, Sydney, Dunedin, Newcastle, Perth**

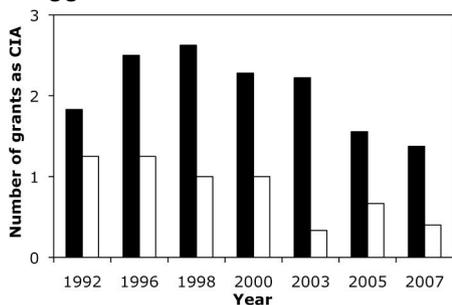
For more information and registration, visit: **[www.adinstruments.com/a&nzworkshops](http://www.adinstruments.com/a&nzworkshops)**

At the end of the grant writing season the thoughts of many turn to the imponderable questions about the features required for a successful grant application. Invariable some stray to questions about the apparent whimsy of funding bodies. The following article has made a good fist at addressing the funding issue from a physiological perspective using available data. Interestingly there was no apparent fall in productivity (papers published) during the period of the data discussed.

## Whither Physiology?

*Do we know where we're going to?*

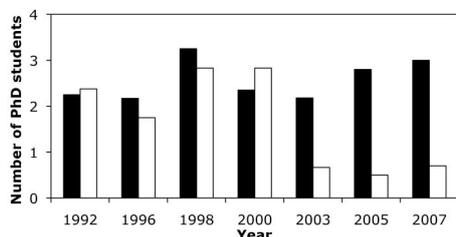
The past decade has seen a number of changes affecting academics in Physiology departments across Australia. These include the transition to graduate medical training, large increases in undergraduate student numbers and various changes to the NHMRC granting system arising from the 1998 Wills Review of Health and Medical Research. Precisely how has all this affected the work of research-active academics? Examination of historical data from published annual reports of my own department suggest an adverse effect.



*Fig 1 Project grants administered by Physiology academics at University of Sydney 1992-2008. Includes NHMRC, ARC, NHF, comparable foreign grants and shares of program grants. Only university-funded academics heading their own research laboratory were included. Filled bars represent established academics (>10 years since appointment). Open bars represent those more recently appointed at the time.*

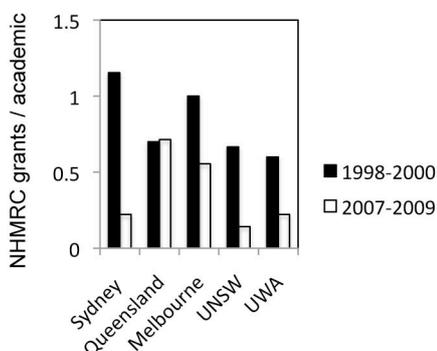
Since the late 1990's the average number of project grants held by physiology academics at Sydney University has declined. This was most marked for early-career academics (Fig 1). The decline in

grants to early-career academics was coincident a drop in the number of PhD students within their laboratories (Fig 2 open bars). Established academics fared better, sustaining their PhD student numbers (Fig 2, filled bars).



*Fig 2 PhD students per laboratory of Sydney University Physiology academics, 1992-2008. Filled bars represent established academics (>10 years since appointment). Open bars represent more recently appointed academics.*

**A national trend?** Comparison of the number of new NHMRC project grants awarded per Physiology academic during a three year period (1998-2000 vs 2007-2009) revealed declines for the Universities of Sydney, NSW, Melbourne, and Western Australia. This data does not permit comparison among the universities involved because it does not include ARC or other types of grant. Nevertheless, during the past decade the number of NHMRC project grants per Physiology teaching academic fell for all the universities examined except the University of Queensland (Fig 3). Maybe the 'Smart State' motto has credence.



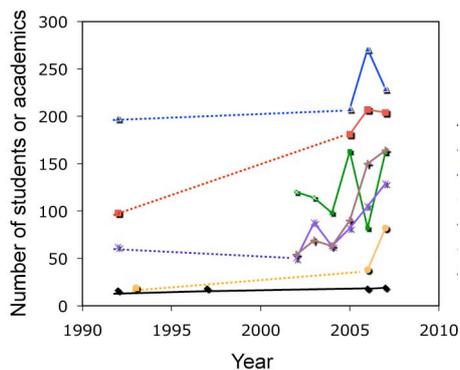
*Fig 3 NHMRC project grants awarded (as CIA) per Physiology academic at the Universities of Sydney, Queensland, NSW, Melbourne and Western Australia during the three year period, 1998-2000 (filled bars) and 2007-2009 (open bars). Laboratory heads were identified by information on their department websites. Their grants were gleaned from NHMRC spreadsheets.*

In the pooled data for universities of Queensland, NSW, Melbourne and WA, early-career and established academics displayed a similar decline in NHMRC project grant numbers over the decade (not shown). Thus the marked decline in grants to early-career academics shown in Fig 1 seems to be particular to University of Sydney. Two

local factors that may have contributed were:

1. A decline in PhD student numbers (Fig 2, open bars). A transition from undergraduate medical training to graduate entry into during the late 1990s is likely to have contributed to this, via diversion of potential and actual PhD candidates.

2. Recent rises in undergraduate teaching (and associated administration) loads per academic (Fig 4).



*Fig 4 Rising undergraduate enrollments in Physiology units of study at Sydney University in the face of static staff numbers. Black symbols, total physiology academic staff; Red and blue, intermediate Medical Science and BSc units of study (respectively); Green & yellow, senior neuroscience units; Brown and purple, senior physiology units.*

**The future** The massive progress in identifying genes and protein-protein interactions offers great opportunities to physiologists. Automated DNA sequencing, mass spectrometry and cell lines have allowed a systematized, engineering approach

to information acquisition. However, it will require the physiologist's deep knowledge and skills in studying the tissue and the organism to understand how molecular signaling systems function in the context of the living organism and how this knowledge may be applied to human health.

Recommendation 2.2.1 of the Wills Review of Health and Medical Research (1998) was to "Attract students by exposing them to the excitement of science, presenting inspirational and well-rewarded role models and informing them of realistic career opportunities". This is an important role that research-active academics have always played. Indeed the science of physiology has been passed down from professor to PhD student in Physiology departments from generation to generation. The ability of our nation to retain a true expertise in physiology will depend upon the role models presented to undergraduates by successful research-active academics. Physiology is a culture. Its survival cannot be just taken for granted.

As a discipline, we need to talk about the future of Physiology in Australia: to identify the factors constraining those of us who combine teaching with research. Some causes of the decline in grants per academic must be addressed at the national level. For example, one outcome of the Wills Review was to throw teaching academics into direct competition for NHMRC project grants with an increasing number of full-time researchers at Institutes. When panels rank grants by teaching academics on track record do they take the "relative to opportunity" clause fully into account?

Australia has been fortunate attract back from overseas many talented research fellows, but they can't all aspire to senior positions in pyramidally-structured research institutes. Unless they can move sideways into an academic position without giving up on their research passion it may be increasingly difficult to attract and retain bright young people in research.

Local factors have also contributed to the decline in grants for teaching academics, as illustrated above. Once we accept that our research and teaching activities interact profoundly with each other we can begin to redress local (School and institutional) hindrances to the future of research-led teaching.

Thanks to Dave Davey, Alan Everett and Peter Noakes for their helpful comments.

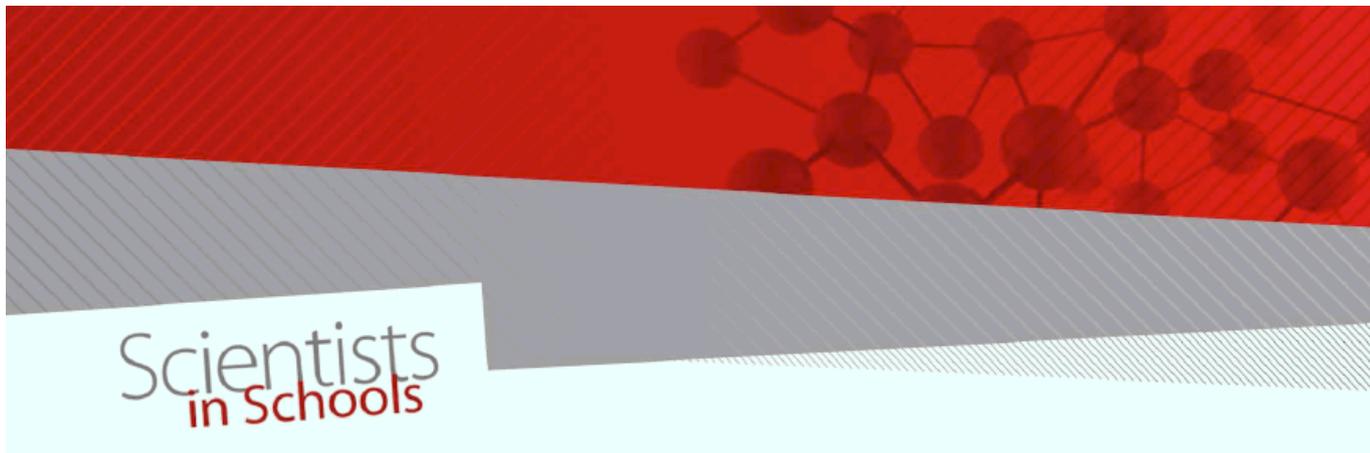
Bill Phillips (billp@physiol.usyd.edu.au)

The National Health and Medical Research Council has released the following draft **documents for public consultation**:

- Guidelines for the Care of Cats Used for Scientific Purposes
- Guidelines for the Care of Dogs Used for Scientific Purposes

The closing date for submissions is 5pm AEST Friday 20 March 2009.

<http://www.nhmrc.gov.au/guidelines/consult/index.htm>



## **A National Initiative.**

Many great promoters have espoused the virtue of training the next generation to ensure that a field of study never loses interest and hence importance, in the light cast by the stars of the next generation.

The former chief scientist of Australia, Dr Jim Peacock, two years ago created a new initiative to enrich with science, the busy secondary and primary school curricula. The project is a voluntary partnership between practising scientists and teachers, Scientists-in—Schools.

## **Link up and learn**

Register today for Scientists in Schools - a learning experience that allows scientists and schools to work together across Australia in flexible, professional partnerships.

[Information for scientists](#)

Students are reminded they may apply for Travel Awards having attended the Melbourne Meeting.

Funds available vary depending on where you travelled from, being Adelaide, Sydney, ACT \$150. Brisbane, \$200 and Perth, \$400.

### **Student presenters at IUPS Kyoto, 2009**

\$1,000 travel awards available on application.

Please apply to the Secretary, Joe Lynch.

## CONTINUING ACHIEVEMENTS

FASTS is Australia's peak science body, representing over 60 professional societies and 60,000 scientists. You are a member of FASTS through membership of your professional society. Our professional staff serve you, your society and the Australian scientific community in a range of ways, and our ongoing contributions to Australian science include:

- 'Science meets Parliament'—FASTS' annual flagship event, where more than 200 scientists have face-to-face meetings with politicians on key science issues
- Highlighting science with the Prime Minister and the Cabinet through the Prime Minister's Science, Engineering and Innovation Council (PMSEIC)
- Organising forums and workshops on key science issues
- Developing science policy at a high level and providing input to Parliamentary Committees, Government Departments and Government reviews and inquiries
- Assisting member societies to raise and develop issues, and
- Distributing information to member societies weekly, and receiving feedback.

## HIGHLIGHTS OF 2008

- Forums on 'Rights and Obligations of Scientists and Researchers' and 'Supporting Risk-Aware Research'
- A national roadshow to gather inputs to FASTS' submission to the Cutler Review
- Submissions to reviews on Higher Education Research Training, Future Fellowships, Defence, Higher Education Endowment Fund, ERA journal ranking, Questacon, CRC
- Continuation of FASTS' successful request for release of ARC grants in early October
- FASTS' statement on Climate Change – reported in 145 media outlets
- FASTS' Taxonomy paper highlighting this endangered species at Smp 2008.

## ONGOING AND FUTURE PROJECTS

In 2009 FASTS will:

- Hold 'Science meets Parliament' on 17/18 March – *contact FASTS to attend*
- Provide to Parliament examples of science success stories *from FASTS' members*
- Present 'On the Radar' briefings on upcoming issues in science that need to be addressed by government, industry and the media – *contact FASTS with your ideas*
- Contribute to the development of National Curricula in science and mathematics
- Investigate whether science graduates have sufficient industry-ready practical skills.

## VALUE TO MEMBERS

In addition to our continuing and prospective activities we will:

- Establish an expert list of FASTS members for media commentary – *via your society*
- Hold a forum on Governance of Science – how can science self-organise better?

FASTS seeks your help through your member society to keep science at the forefront of the national agenda in these challenging times. For more information visit the FASTS' website:

[www.fastst.org](http://www.fastst.org)

## The con-joint meetings of Biology and Synchrotron Radiation (BSR) and Medical Applications of Synchrotron Radiation (MASR)



15th-18th February 2010

Melbourne Convention and Exhibition Centre, Australia

### Key dates:

Early Bird Deadline - Friday 27th November, 2009

Abstract Submission Deadline - Friday 27th November, 2009  
(abstract submission may be open for posters after this date)

### BSR session themes:

- Protein structure and function
  - Genomics/proteomics
  - Membrane proteins
  - Multi-protein complexes
  - Metalloproteins
- Biomaterials
- Spectroscopic techniques
- Non crystalline diffraction

### MASR session themes:

- X-ray imaging
  - Technique developments/new methods
  - Facility updates
- Radiology
  - Medical applications
  - Pre-clinical studies
- Dosimetry and Radiation Biology
- Oncology
  - Therapeutic techniques (MRT, proton etc)
  - Pre-clinical studies
  - Medical applications
- Pathology and diagnostics

### Sponsors:



**MONASH** University  
Centre for Synchrotron Science



**CSIRO**

[www.masr2010.org](http://www.masr2010.org) or [www.bsr2010.org](http://www.bsr2010.org)

## **Election of Honorary Members**

Members may be nominated for Honorary membership at any time. Presently George Stevenson has been nominated

## **AuPS Sustaining members**



### **AuPS - SPECIAL INTEREST GROUP COORDINATORS**

#### **Muscle**

- Graham Lamb
- Gordon Lynch

#### **Smooth Muscle and Autonomic NS**

- Caryl Hill
- Dirk Van Helden
- James Brock

#### **Physiology Education**

- Phil Poronnik
- Jeff Schwartz
- Anne Sefton

#### **Endocrinology, Reproduction and Fetal Development**

- Chen Chen
- Karen Gibson

#### **Cardiovascular**

- Livia Hool
- David Allen
- Lea Delbridge

#### **Neurophysiology**

- Pankaj Sah

#### **Exercise**

- Mark Hargreaves
- Mike McKenna

#### **Metabolism and Signalling**

- Mark Febbraio

#### **Cell signalling**

- David Cook
- Grigori Rychkov

#### **Channels and Transporters**

- Stefan Broer
- Jamie Vandenberg

## **New Special Interest Groups**

Nominations for Special Interest Group topics and coordinators are welcome at any time. With the upcoming 50<sup>th</sup> Anniversary meeting, 31<sup>st</sup> January – 3<sup>rd</sup> February, 2010, consider forming a SIG around your topic of interest and plan a symposium.

## Meetings in 2009



Kyoto, Japan, July 27 - August 1, 2009  
Function of Life : Elements and Integration  
**XXXVI International  
Congress of Physiological Sciences**

Invitation for Travel Grant Application for IUPS 2009 in Kyoto  
**Application for Young Investigators' Travel Grants are now open.**

For more information please visit: <http://www.iups2009.com>

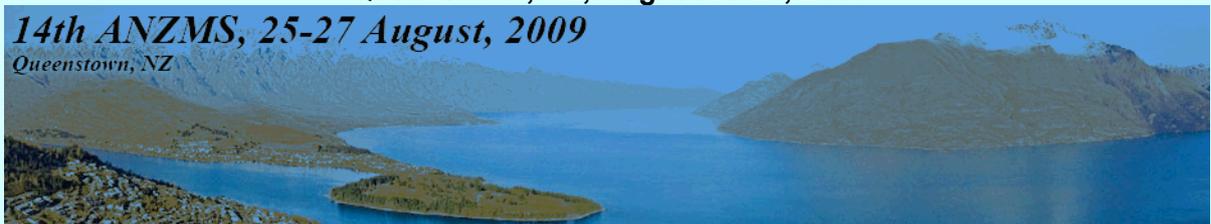
**AuPS travel awards available for students presenting at this meeting -\$1,000**

### **14th Australian and New Zealand Microcirculation Society Meeting**

Queenstown, NZ, August 25-27, 2009

**14th ANZMS, 25-27 August, 2009**

Queenstown, NZ



[http://www.anzms.org/site/anzms\\_upcoming\\_conferences.html](http://www.anzms.org/site/anzms_upcoming_conferences.html)

### **American Thoracic Society International Conference**

**May 15-20, 2009. San Diego, California.**

A comprehensive review of the latest information on the diagnosis and treatment of respiratory, critical care and sleep disorders.

In addition, more than 5,500 original research abstracts will be presented, giving attendees new perspectives on the clinical, basic science and translational discoveries that will shape the future of adult and pediatric respiratory care. Among the many topics to be covered are asthma, COPD, lung cancer, obstructive sleep apnea, pulmonary hypertension, cystic fibrosis, ARDS, and sarcoidosis. The Advance Program with registration form will be available in January 2009 at <http://www.thoracic.org/>

. For more information, please contact t



XXIVth International Symposium on Cerebral  
Blood Flow, Metabolism and Function  
&  
IXth International Conference on  
Quantification of Brain Function with PET



Chicago, IL USA, June 29 – July 3rd, 2009

This issue of AuPS News has been compiled by Simon Potocnik with many thanks to the generous contributors. The next issue of AuPS News will be distributed to members in June 2009. Any contributions for AuPS News should be sent to: [newsletter@aup.org.au](mailto:newsletter@aup.org.au).