AuPS News

December, 2006

President's Report

The annual AuPS meeting held as a participant of ComBio this year was a great success. The meeting was attended by ~130 AuPS members and students. It is important to note that all sessions were well attended by a large number of ComBio registrants as well as our own members. In addition, our members also found many of the Plenary sessions and symposia at ComBio to be of great value. A key outcome of the meeting was that our Society was able to project a very visible presence to our colleagues in the other disciplines. The meeting served to highlight the significant interactions that the discipline of physiology has with other groups in ComBio. In addition, for many of our international Plenary / symposia speakers it was the first opportunity to experience a large conference in Australia and they commented specifically on the excellence of our science. Dr. Dee Silverthorn represented the American Physiological Society at the conference and participated in the Education Symposium. She was impressed by the commitment to excellence in teaching that was shown by AuPS and ComBio in general.

There were a number of highlights at the meeting. The meeting began with the AuPS Invited Lecture given by Professor Caroline McMillan (Uni SA), which was to a standing-room only audience. All of the invited speakers presented outstanding lectures in rooms filled to capacity. This conference provided our postgraduate students with the opportunity to present their data to a large and international audience and they are to be congratulated on the excellent standard of their presentations.

The mixer events were a great success and allowed excellent interaction with the various trade representatives. Our sponsors made particular comment on how valuable it was for them to be able to represent at such a large forum. The conference dinner was another opportunity to mix with our colleagues and was complemented by a rather spectacular and prolonged thunderstorm. Overall, the reports back from those that attended the ComBio 2006 conference were overwhelmingly positive and we look forward to welcoming even more AuPS members to the next joint meeting.

In physiology education, AuPS members continue to make an impact to teaching ex-

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The Australian Physiological Society is an Incorporated Association in the State of Victoria. Reg. No. A0021266A

Postcard from Ireland

Have you thought about a postdoc or a sabbatical in Ireland? When I moved here in 1995 we were strong on ideas but the national infrastructure for research was seriously deficient. Over the last eight years, however, this situation has changed dramatically. Project funding through the Health Research Board (equivalent to the NHMRC) has risen 10-fold, the Higher Education Authority has released many millions of Euro for capital funding of research institutes and Science Foundation Ireland has been created specifically to provide high-level funding to areas underpinning biotechnology and information technology.

Collectively, these changes have altered the profile of Irish biomedical science beyond recognition. In the case of Trinity College Dublin, the focus has been on neuroscience, molecular medicine and bioengineering. Each of these areas has a new building and multidisciplinary research teams with access to cutting-edge technologies. In the case of the Trinity Institute for Neuroscience, which is located adjacent to my Department, these include MRI facilities for both human and animal studies.

These developments have created a range of opportunities for overseas visitors at all levels, from students to professors. Dublin is an increasingly cosmopolitan society, set in an idyllic seaside position and close to unspoilt countryside. London is 40 minutes away and you can be almost anywhere in Europe in around two hours. If your research interests are in a relevant field, look at our websites and talk to someone about a visit.

Prof. Christopher Bell
Professor of Physiology
Trinity College Dublin
http://www.medicine.tcd.ie/physiology

Links

Science Foundation Ireland http://www.sfi.ie

Trinity College Institute of Neuroscience
http://www.neuroscience.tcd.ie

Institute of Molecular Medicine, Trinity College Dublin
http://www.tcd.ie/IMM

Trinity Centre For Bioengineering, Trinity College Dublin
http://www.tcd.ie/bioengineering/

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cellence. Three of our members have recently been recognised by significant awards. AProf. Phil Poronnik (UQ) was awarded one of eight national Associate Fellowships from the Carrick Institute for Learning and Teaching in Higher Education. He will work together with Prof. Peter Adams (Mathematics, UQ) on a project to investigate the embedding of quantitative principles in the life sciences. AProf. Andrew Hoey (USQ) received a Carrick Institute Citation for Outstanding Contributions to Student Learning for sustaining excellence and facilitating an effective learning environment by providing context and demonstrating relevance for biomedical students and nursing students. AProf. Robert Kemm (UM) also received a Carrick Institute Citation for Outstanding Contributions to Student Learning for excellence in teaching through over a decade of sustained innovation and evaluation of computer-assisted learning for small group collaborative student activities.

AProf. Chen Chen (Prince Henry's Institute of Medical Research) and I attended, as invited guests, the 80th Anniversary of the Chinese Association for Physiological Sciences Congress held 4 to 6 November in Beijing, China. Representatives of the Physiological Society, the American Physiological Society and the Canadian Physiological Society attended the Congress, which had more than 1,000 participants. A preparatory meeting was also held to explore a joint scientific conference of the national physiological societies of five countries, namely Australia, Canada, China, U.K. and U.S.A. to be held in Beijing in October 2008. This topic will be discussed at an AuPS Council meeting proposed to be held in March 2007 and hopefully I can report the outcomes to the membership in the next Newsletter.

Preparations are underway for the AuPS meeting to be held with the Australian Society for Biophysics, in Newcastle, 3 to 6 December 2007. The Local AuPS Organising Committee for the meeting is AProf. Derek Laver (Chair), Dr. Robin Callister, AProf. Dirk van Helden and Prof. David Pow. The annual meeting provides a forum for AuPS members and, in particular, student members to attend plenary lectures and symposia but also to present either oral communications and/or posters. Your input and suggestions for symposia is encouraged and welcome.

2007 promises to be an exciting and challenging year for the AuPS. I invite you to join me in continuing to work to increase AuPS membership and raise the profile of physiology in Australia.

Finally, I wish all AuPS members a joyous Christmas and a prosperous New Year.

David Adams
President

AuPS Student Event – Brisbane 2006

The invited speaker at this year's AuPS student event in Brisbane was Prof. David Clapham, who is a Howard Hughes Medical Institute investigator and has been the recipient of numerous awards and prizes for his contributions to the study of ion channel physiology. AuPS students at this year's meeting in Brisbane were given a privileged inside into Prof. Clapham's career and experiences in science.

Prof. Clapham's talk was both engaging and inspiring. His candid recount of his experiences as a postgraduate student resonated with many in the audience. He recalled how he would often go into the lab after a day in the clinic and work into the early hours of the morning, sometimes staying the night in the lab. His message was clear – to succeed in science you must be driven, have a passion for answering questions and be dedicated to your project.

The interactive nature of Prof. Clapham's talk was also a highlight. There were lively discussions about how to juggle family and work commitments and how to deal with politics in science. There were valuable lessons to be learnt for all of the young aspiring scientists in the audience. Students also had the opportunity to meet and talk to Prof. Clapham after his talk over drinks and finger food at The Savoy.

This year's student event was one of the highlights of the AuPS meeting. I would like to thank A.Prof. Gordon Lynch, A.Prof. Phil Poronnik and Ms Prue Donovan for their help with organising the event. I look forward to planning next year's event for the meeting in Newcastle.

Enzo Porrello
AuPS student rep
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AuPS Announcements

2007 Scientific Meeting

The 2007 scientific meeting will be held in conjunction with the Australian Society for Biophysics and hosted by Newcastle University and will be held at the Newcastle City Hall, from 3 to 6 December, 2007. The local secretary for the meeting is AProf. Derek Laver, who is being assisted by Dr Robin Callister, AProf. Dirk Van Helden and Prof David Pow.

Student Travel Awards

Student members attending the AuPS scientific meeting in conjunction with ComBio received travel awards to assist with the costs of attending the meeting. Students were awarded $300 for travel from Sydney, $400 from Melbourne and Adelaide, and $500 from Perth.

New Councillors

At the AGM in September, AProf Dirk Van Helden (1995-1998, 2003-2006), Dr. Susie Mihailidou (2003-2006) and AProf. Chen Chen (2003-2006) all stepped down after having served a full three year term on the AuPS Council. The AuPS Council extends their sincere thanks for the service that Dirk, Susie and Chen have provided to the Society.

The Council welcomes three new councillors that have been elected. These are:

- **Dr. Livia Hool**, Department of Physiology, School of Biomedical and Chemical Sciences, The University of Western Australia.
- **Dr. Guiseppe Posterino**, Department of Physiology, School of Molecular and Biomedical Sciences, The University of Adelaide.
- **Dr. Jamie Vandenberg**, Victor Chang Cardiac Research Institute, Sydney.

New Appointments

The AuPS Council has also made the following appointments;

- **Dr. Anuwat Dinudom** (The University of Sydney) has been appointed as Editor for the AuPS.
- **Dr. Trevor Lewis** (The University of New South Wales) has been appointed as Associate Editor.
- **Hon.AProf. Dave Davey** has been appointed to the new position as IT manager.

Members Co-opted to Council.

- **Prof. David Cook** (The University of Sydney) has been co-opted to the AuPS Council in his role as the representative on the Federation of the Asian and Oceanian Physiological Societies (FAOPS) Council.
- **AProf. Joe Lynch** (The University of Queensland) has been co-opted in a supporting role for the National Secretary.
- **AProf. Dirk Van Helden** has been co-opted to assist in the planning of the 2007 scientific meeting.

A.K McIntyre Prize 2006

The A.K. McIntyre Prize is awarded to members of the Society who are judged to have made significant contributions to Australian physiological science over their pre-doctoral and early postdoctoral years. The recipient of the 2006 A.K McIntyre Award is Dr. Paul Gregorivic.

Paul Gregorevic attained his PhD from the Department of Physiology at The University of Melbourne in 2001, where he studied aspects of skeletal muscle adaptation and regeneration under the supervision of Drs Gordon Lynch and David Williams. Upon completion of his doctoral studies, he continued with Dr Lynch to examine

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the temporal development of contractile properties in regenerating muscles, the effects of IGF-I supplementation as a therapeutic intervention in murine models of muscular dystrophy, and the influence of repeated beta-adrenergic agonist administration upon cardiac performance.

In 2002, Paul took a post-doc position at The University of Washington, Seattle, to work with Dr Jeffrey S. Chamberlain - an authority on Duchenne muscular dystrophy and gene therapy. This provided an opportunity to combine his interests in basic and translational muscle research and work on interventions for serious muscle diseases. Paul found that one of the biggest challenges associated with developing genetic therapies for muscle disorders is finding a way to deliver genes to affected muscle cells throughout the body. Much of his work in the Chamberlain Lab has focused on this issue. He has made exciting progress using recombinant adeno-associated viral vectors (rAAV vectors) to deliver genes to muscle cells via the circulatory system. Using this technique he was able to extend the lifespan of severely dystrophic mice by introducing a dystrophin-based construct. It has provided an opportunity to investigate the physiological effects of dystrophin gene replacement and to study the signalling pathways that regulate muscle structure and function. Paul hopes that advances in gene transfer technology and a greater understanding of the mechanisms that regulate muscle regeneration and adaptation will help to develop therapeutic interventions for the treatment of many muscle disorders.

Presently, he is studying the events controlling muscle hypertrophy and how vector-mediated genetic regulation of specific signalling steps might be used to enhance muscle function in muscular dystrophy. Ultimately he would like to establish his own independent research program in this area.

Paul also acknowledged the role that the AuPS has played in his career, providing an important forum for students to present their work and receiving valuable feedback. Paul still feels a strong tie with the AuPS and regards it as his 'home' society. Reflecting on the AuPS and the AK McIntye award, Paul said, "AuPS members have helped shape the person I am today."

Paul receives the A.K. McIntyre Prize medal and $1000. The prize is generously supported by SDR Clinical Technology.

Trevor Lewis
School of Medical Sciences
The University of New South Wales

The A.K. McIntyre Award was established in 1994 in honour of the Society's first President. A biography of A.K. McIntyre is available on the Australian Academy of Science web site at: www.science.org.au/academy/memoirs/mcintyre.htm

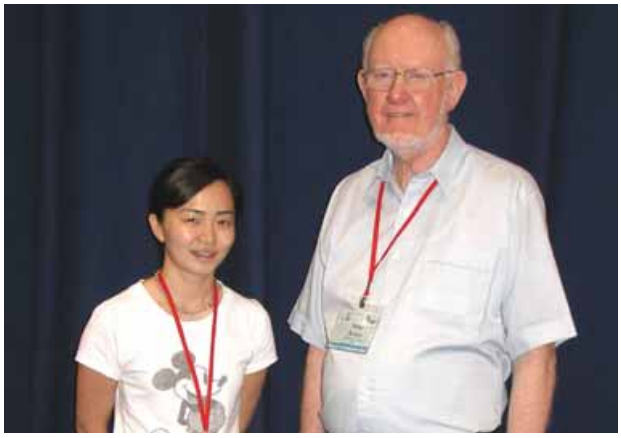
New Appointments

Prof. Vaughn Macefield has recently been appointed Foundation Chair of Physiology at The University of Western Sydney. Prof. Macefield completed his PhD in animal neurophysiology under Dr Bruce Nail at the Dept of Physiology and Pharmacology at UNSW in 1986, then undertook a postdoc in human neurophysiology at Prince Henry Hospital in Sydney with Profs David Burke and Simon Gandevia. In 1990 he was awarded an NHMRC CJ Martin Fellowship, which took him to Sweden for two years (Prof Roland Johansson, Umea; Prof Gunnar Wallin, Goteborg). In 1993 he was appointed as Visiting Fellow at the JB Pierce Laboratory at Yale University and in 1994 he returned to Australia to establish his own laboratory at the Prince of Wales Medical Research Institute, where he progressed through the NHMRC Fellowship scheme (RD Wright, Research and Senior Research Fellowships).

SDR CInical Technology Oral Presentation Prize

The SDR Clinical Technology Oral Presentation Prize 2006 was awarded to Wade Kruger (School of Biological Sciences, The University of Queensland). Presented by Dr Peter Kenny of SDR Clinical Technology.

Abstract: W.A. Kruger, G.R. Monteith and P. Poronnik. Muscarinic agonist-induced recruitment of plasma membrane Ca^{2+} ATPase (PMCA) to the membrane involves the PSD95 / Dlg / ZO-1 (PDZ) scaffold Na^{+} H^{+} exchanger regulatory factor 2 (NHERF-2). *Proc. AuPS* 38, 66P.



SDR CInical Technology Poster Prize

The SDR Clinical Technology Poster Prize 2006 was awareded to Sooyhun Lee (School of Biological Sciences, The University of Queensland). The award was presented by Dr Peter Kenny of SDR Clinical Technology.

Abstract: S. Lee, P.A. Dawson, A.K. Hewavitharana, P.N. Shaw and D. Markovich. Increased acetaminophen hepatotoxicity in the Nas1 and Sat1 sulfate transporter null mice. *Proc. AuPS* 38, 87P.

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Frontiers in Research Series!

Issue Two:

Intrarenal Oxygenation.
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Highlights from this special issue include:

Renal Oxygen Delivery:
Matching Delivery To Metabolic Demand
Paul M O'Connor

Hypoxia-Induced Erythropoietin Production:
A Paradigm For Oxygen-Regulated Gene Expression
Christian Stockmann, Joachim Fandrey

Renal Parenchymal Oxygenation And Hypoxia Adaptation In Acute Kidney Injury
Christian Rosenberger, Seymour Rosen, Samuel N Heyman

Intrarenal Oxygenation In Chronic Renal Failure
Jill T Norman, Leon G Fine

Intrarenal Oxygen In Diabetes And A Possible Link To Diabetic Nephropathy
Fredrik Palm

Intrarenal Oxygen And Hypertension
William J Welch

CEPP Oral Presentation Prize

The CEPP Oral Presentation Prize 2006 was awarded to Felice Beitzel (Department of Physiology, The University of Melbourne). The award was presented by the AuPS President, Prof David Adams, on behalf of CEPP.

Abstract: F. Beitzel, M.N. Sillence and G.S. Lynch. Inhibition of ß-adrenergic signalling impairs functional repair of rat skeletal muscle after injury. *Proc. AuPS* 38, 58P.

CEPP Poster Presentation Prize

The CEPP Poster Presentation Prize 2006 was awarded to Enzo Porrello (Department of Physiology, The University of Melbourne). The award was presented by the AuPS President, Prof David Adams, on behalf of CEPP.

Abstract: E.R. Porrello, C.L. Curl, S.B. Harrap, W.G. Thomas and L.M.D. Delbridge, Is neonatal myocardial apoptosis a prelude to cardiac hypertrophy in the hypertrophic heart rat? *Proc. AuPS* 38, 107P.

AuPS Honorary Members

At the AGM in September, **Prof. Ann Sefton** and **Prof Trefor Morgan** were both elected as honorary members of the AuPS in recognition of their contribution to the Society and the discipline of physiology. A short profile of both Prof. Sefton and Prof. Morgan is presented here in celebration of their honorary membership.

Professor Ann E. Sefton AO, BSc(Med) (Hons), MB BS (Hons), PhD, DSc

Ann Sefton can be regarded as the complete academic, excelling in research, teaching and administration. She has spent all her career in the University of Sydney, first as medical student, then as postgraduate, finally as staff member. She is an adornment to Physiology, to her Faculty and to the University.

With more than 3500 citations to her research papers, it is clear that Ann was a very competent research worker. She had a particular talent for writing reviews both in individual papers but also as chapters in books, many of which were highly cited. This facility was also evident in her contributions to several books dealing with the history of the Faculty of Medicine in the University if Sydney.

Ann gave a tremendous amount of her time to her teaching duties. This had two aspects. First, there were the tedious but necessary tasks of preparing lectures, slides, practical class notes and so on; the development of new classes; the setting of exam papers; the business of ensuring a fair marking system; the interviewing of students, especially those with problems. All this Ann did superbly, earning the thanks and affection of decades of students.

Her interest in teaching did not end there. She became involved in the philosophy of teaching and this led to a thorough study of Problem-based Learning, on which she became an authority. The final step in this process was Ann's excursion into reform of the medical curriculum. This was a huge step. It meant the overthrow of the existing system, based on Flexner's philosophy in which the student progresses from basic science to basic pre-clinical science to clinical studies and experience. In the new system the medical degree became postgraduate but it demanded no prerequisites: the first degree need not contain any of the former basic science subjects. In the new degree the student encounters clinical problems at the start of the medical course. It may be too early to say if the reform has been successful. Good students will survive the worst of courses - and medical students are among the best. What the new system probably does is to eliminate those students who are unsuited to being doctors.

Ann's efforts in the Educational field have attracted attention both in Australia and abroad and she has been invited to join the review boards of many medical schools and to act as Consultant for Medical and other Faculties.

As if this was not enough, Ann has spent long hours, sitting on countless committees and attending endless functions. She has been Deputy Chair of the Academic Board and is at present Deputy Chancellor of the University of Sydney. She was appointed to a personal Chair in Physiology in 1992. She was made an Officer of the Order of Australia (AO) in 2000. We can be proud to have her as an Honorary Member of our Society.

EProf. Liam Burke
Department of Physiology
The University of Sydney

Professor Trefor O. Morgan MB BS (Hons), BSc med (Hons), BAppl Sci (wine), FRACP

Trefor Morgan retired in March 2004, after a distinguished association with the University of Melbourne that began 33 years before with his appointment as First Assistant in the Department of Medicine (Austin & Repatriation General Hospital). With a clinical background in renal and cardiovascular medicine, Prof.

Morgan focussed his research on hypertension. His original contributions on the pathogenesis, prevention and treatment of hypertension are recognised internationally and have shaped clinical practice. Prof. Morgan took major roles in the two Australian National Blood Pressure Trials that have been international landmarks in the field. His advocacy of the importance of salt and blood pressure pre-dated the contemporary resurgence of interest in this topic and his novel hypotheses regarding salt and the vascular and cardiac complications of hypertension help define a new chapter of basic and clinical research. His research has enjoyed funding from major national sources including the National Health and Medical Research Council and the Heart Foundation of Australia and has resulted in over 300 scientific publications. Internationally Prof. Morgan's professional standing is reflected by the regular invitations to speak at major conferences and the large number of journals that have sought his membership of their editorial boards.

Prof. Morgan's contributions to teaching have been no less impressive. As Foundation Professor of Medicine at the University of Newcastle he helped pioneer a new medical curriculum based on integrated teaching that was unique at the time, and a forerunner of the problem-based curricula that exist today. His strengths at bridging basic and clinical sciences were further developed after his appointment of Professor and Head of Physiology at the University of Melbourne in 1984. Early on he introduced clinically relevant subjects to second year medical students, and more recently he has been closely involved in the development and implementation of contemporary medical curriculum in which clinical teaching begins from day one. He also fostered the use of computers in undergraduate teaching and placed the Department of Physiology at the international forefront in multimedia teaching and education.

Prof. Morgan's administrative skills were honed early in his career as a Clinical Superintendent at the Royal Prince Alfred Hospital in Sydney. Through the application of sound organisational principles he ensured a comprehensive and effective departmental teaching administrative framework, much appreciated by students.

Despite his extensive academic and clinical commitments to the Faculty of Medicine, Dentistry and Health Sciences and it associated hospitals and their patients; Prof. Morgan has also managed to achieve additional academic qualification in the form of B.Appl.S.(Wine). More importantly, he has put theory into practice with great success at his own vineyard: Mount Charlie wines.

Professor Morgan remains very active in retirement. For the University, he continues to deliver lectures in medicine, physiotherapy, dental science, biomedical science and science. He is also a regular invited lecturer in Indonesian medical schools. As Secretary General of the Asian Pacific Society of Hypertension he makes important ongoing contributions to research and clinical science.

Prof. Stephen Harrap
Department of Physiology
The Univerwsity of Melbourne

Important Dates

12 to 17 July 2007
IBRO World Congress Of Neuroscience Melbourne
Online registration and abstract submission is now available. For full details, including the scientific program and satellite meetings see http://www.ibro2007.org

25 to 29 August 2007
25th International Australasian Winter Conference on Brain Research
Copthorne Resort Hotel, Queenstown, New Zealand. Contact Prof. Cliff Abraham (awcbr@psy.otago.ac.nz)
Further information and registration-
http://www.awcbr.org

3 to 6 December 2007
Joint AuPS and ASB scientific meeting Newcastle
For further information, check the AuPS website and the next newsletter will have further details.

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Violetta Mironova (Sales Manager)

This issue of AuPS News has been compiled by Trevor Lewis. The next issue of AuPS News will be distributed to members in March 2007. Any contributions for AuPS News should be sent to: newsletter@aups.org.au