

## Special Interest Articles:

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## Newsletter of the College of Biomedical Engineers

### Our first newsletter for several years ...

Over the years biomedical engineers have published good newsletters and many excellent technical and scientific papers in the Australian Journal of Biomedical Engineering.

More recently we've co-published the journal "Australasian Physical and Engineering Sciences in Medicine" with the ACPSEM. We wanted a journal which would feature scientific articles, technical notes, "letters to the editor" and management articles. We

hoped there would be an equal mix of articles on medical physics and biomedical engineering.

It hasn't worked and the journal has struggled to get BME articles. It seems that hospital-based biomedical engineering personnel don't want to, don't have the time, or just don't care about writing up the projects they create. University-based biomedical engineers in general don't find the journal appropriate to their needs, and industry-based

engineers are probably too busy - so our contribution to the journal as a profession has been minimal. The College Board has this year resolved to discontinue our involvement in the journal and put our efforts into producing material that is more sought after, using media such as this newsletter.

This first newsletter will be sent only to members of the College of Biomedical Engineers.

### A message from the chair

Welcome to the first edition of the newsletter of the College of Biomedical Engineers. This concept has been in the pipeline for some time, we have now converted the concept to reality so I hope that you find it useful. The College looks forward to this becoming a regular and much anticipated publication that keeps you up to date with news and views that are relevant to your practice and interests. At the present time distribution is to College members only but feel free circulate it to your

friends and colleagues.

As College members you might wonder what is happening? What is the College Board doing? We hope to fill you in on what is happening in these newsletters. Much College Board activity goes on "behind the scenes" and is aimed at building and strengthening our profession. Some key activities at the present time include:

- Developing a health infrastructure report

card similar to the report cards that EA produce on civil infrastructure.

- Developing competencies, standards and influencing legislation.

Much of the work of the College is delivered by the National Panels on Clinical Engineering and Biomechanics of Impact Injury, and the National Committee on Rehabilitation Engineering. These groups are working on many projects

## Chairman's message continues....

and delivering CPD across the country. You will find reports on their activities in each newsletter.

I will keep you updated regularly on current affairs and hope you find that this newsletter is a good read.

Please feel free to contribute or comment and help to build it into something that we have all been looking for!

Best wishes,  
Adrian Richards  
Chairman, College of  
Biomedical Engineers

## Board initiatives

### **Developing a health infrastructure report card similar to the report cards that EA produce on civil infrastructure.**

We are exploring the possibility of doing this within the healthcare sector. There are some common pressures faced across the country in attempting to manage an aging population of medical devices and it is time to report on this in an objective and high profile manner that will draw appropriate attention to this important issue.

### **Developing competencies, standards and influencing legislation.**

It has long been recognised that the support of clinical devices by BME practitioners is an area of practice that is high impact and high risk. At the present time there are no checks and balances in place, let alone legislative controls, over the competencies of those practising in the area. This is a cause of concern for many of us. If there is a mishap

that implicates one of us we will be very publicly seen to not have our "house in order". As a profession, this is a situation that may well be very difficult to recover from. The board is constantly exploring ways to develop competencies, influence legislation and be proactive in this important area.

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*"At the present time there are no checks and balances in place, let alone legislative controls."*

## Biomedical Engineering in the Pacific

AusAID-funded biomedical engineering assistance to the Pacific Islands finished at the end of 2007.

Over the past 7 years, two projects have provided engineers and technicians to repair equipment, train & mentor local BMETs and nurses and to provide infrastructure and equipment for 8 countries. The PNG and Pacific

Medical Equipment Management / Maintenance Projects have had some successes in some countries and provinces, but overall achieving a sustainable outcome is difficult.

Medical equipment in PNG and the Pacific is usually donated, and hence, is of many types, usually in poor condition and almost never supplied

with service manuals, consumables, let alone even power cords. The technicians are often low-skilled and poorly paid, and not motivated to work.

A session at ABEC 2007 was dedicated to developing strategies for assisting developing countries. See ABEC report, page 6.

## SMBE holds successful conference at Gosford Racecourse in March 2007

The annual SMBE Country Technicians' Conference was held this year at Gosford Racecourse from 26 to 28 March. A good role up of registrants and trade exhibitors were treated to an excellent scientific programme and the usual enjoyable social programme. The conference kicked off as always on Sunday night

with a Welcome Bar-B-Q at the Racecourse followed by the Monday night Conference Dinner at local nite-spot Iguana Joe's.

Paul Cookson from Hunter Clinical Technology was at the conference. His full report can be found at

[SMBE Report](#)



Conference Dinner

## NPBII's Rear Seat Passenger Safety Seminar

This time last year the National Panel on the Biomechanics of Impact Injury held a seminar highlighting issues in the safety for vehicle passengers seated in the rear.

There were four speakers, including Dr Suzanne Tylko, from Transport Canada, Mr Michael Griffiths, NPBII Chairman, A/Prof Lynne Bilston from the Prince of Wales Medical Research Institute and Dr Robert Anderson from the Centre for Automotive Safety Research.

Key issues included the relatively low level of protection afforded rear seat passengers

compared to what could be achieved if safety systems that are routine in the front seat, such as well-designed anti-submarining seat cushions, seat belt pretensioners and airbags were available in the rear seat. Examples of current rear-seat environments in simulated crashes demonstrated these points.

Drs Bilston and Anderson focused on child occupants. They outlined the mismatch between the size of older children and current rear seats and booster seats, as well as the potential benefits of making child-restraint recommendations based on age rather than weight.

This is a particularly topical issue, with the very recent announcement of proposed changes to the Road Rules which would mandate child-restraint and booster-seat use until children turn 7.

The seminar was well-attended, with 40 registrants packing the venue. NPBII wishes to thank NRMA for sponsorship of this seminar.

### Future activities include

A one-day seminar which will coincide with the 2008 Road Safety Research, Policing and Education Conference in Adelaide in November 2008.

This will utilise international and Australian speakers attending the conference.

### Other activities of the Panel include

Involvement with the standards

- AS/NZS 1754 – Child-restraints for use in motor vehicles. This standard is undergoing a major revision.
- AS/NZS 1698:2006 - Protective Helmets for Vehicle Users and
- AS/NZS 2512 - Methods of Testing Protective Helmets

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*“Key issues included relatively low level of protection afforded rear seat passengers ...”*

## NCRE holds Wheelchair Safety & Standards Forum



*"What are the numbers  
and what do they  
mean?."*

The National Committee on Rehabilitation Engineering ran its 5th National Symposium on Wheelchair Safety and Standards at the Royal Brisbane Hospital, on 25<sup>th</sup> July.

The symposium was entitled "Clinical Measurement: What are the numbers and what do they mean". It drew a broad cross section of the assistive technology sector and lively debate ensued.

The NCRE is currently planning the next Forum to take place during the ARATA 2008 Conference.

The day-long forum will be held on Wednesday 24<sup>th</sup> September, and will focus on "Development and

## Rehabilitation Engineers hold their 3<sup>rd</sup> Development Workshop

Last July the NCRE hosted the 3rd Rehabilitation Engineering Development Workshop at the Rehabilitation Engineering Centre, of Brisbane's Royal Children's Hospital. The workshop was designed for emerging or developing Rehabilitation

Engineering practitioners at all levels of academic qualification. As with past workshops, it provided a forum and opportunity for these individuals

- to extend both themselves and their Rehabilitation

- Engineering knowledge,
- to mentor with experienced individuals, and
  - to establish or enhance networking opportunities amongst their peers.

## Rehabilitation Engineers set the standard

Many members of the NCRE are actively involved in standards development and review in the rehabilitation and assistive technology sector.

The Standards Australia ME67 Committee is currently in the process of harmonising a number of Australian Standards (particularly the AS3696 series) with their ISO counterparts.

Naturally, Australian engineering is not just following what happens overseas. Many key developments and initiatives started through Australian research and engineering experience.

Australia is currently the only country in the world that requires dust protection tests for powered wheelchairs.

We continue to build our reputation as pragmatists in achieving quality standards and often broker discussions between our European and North American counterparts!

The last AS ME67 Committee meeting was held in Melbourne at the end of March with the next scheduled for 27<sup>th</sup> June in Sydney.

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## Clinical Engineers' Major Projects

A major project for the NPCE over the near future is to attempt to bring a reasoned approach to the application of Risk Management to the setting of testing (extent and regularity) for medical equipment in routine clinical use. Such an approach is not without precedent, and is specifically noted as a viable option in AS3551, though there is little agreement on the appropriate details of such approach. It is hoped that Clinical Engineering input and the resources of Engineers Australia will result in guidance documents for practitioners and health

care providers on this difficult topic.

Another major project for the NPCE in the near future is the full implementation of a peer-review program looking at the operation of practitioners and clinical engineering departments in hospitals. It is hoped that open exchange of ideas and practices will lead to improvements in service. A detailed procedure for such reviews has been developed, and the first few reviews are expected to take place over the next few months. Watch this space!

The NPCE has recently opened dialogue with the Australian Council on Healthcare Standards. ACHS is the body that accredits hospitals in Australia and anything we can do to inform the ACHS surveyors of the parameters under which we work will be beneficial.

NPCE Chairman, Rob Wilkins is currently drafting an EQuIP Update for the ACHS. The update will outline specifications for maintenance of medical equipment and provide guidance for the clinical engineering industry and the ACHS surveyors.

## NPCE holds 9<sup>th</sup> Annual Development Workshop

The 9<sup>th</sup> NPCE Development Workshop was held on the weekend of 13 & 14 October 2007 prior to ABEC 2007 in Fremantle.

This training/development workshop is intended for emerging or developing Clinical Engineering practitioners at all levels of academic qualification, currently practicing within the field of Clinical Engineering.

It aims to provide the forum and opportunity for these individuals to extend both themselves and their

biomedical engineering knowledge, to mentor with experienced Clinical Engineers and to establish or enhance networking opportunities amongst their peers.

The Workshop is not an instructional forum and all attendees are expected to present a paper from a list of managerial, clinical and technical topics and to participate in general discussion on each topic.

This year topics chosen by the nine participants included Surgical instruments, Do CEs &

BMETs need to know Anatomy and Physiology, Should we use non-original parts for repairs, Dialysis, Imaging modalities, Mobile wireless

communications in the hospital, and for the Hospital in the home programme.

All participants agreed that the workshop was a resounding success



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## EPSM / ABEC 2007 Fremantle

The annual Biomedical Engineering conference ABEC was held from 14<sup>th</sup> to 18<sup>th</sup> October 2007 at the Fremantle Esplanade Hotel Convention Centre.

The conference which was held in conjunction with the Engineering and the Physical Sciences in Medicine Conference (EPSM) provided a range of excellent papers and workshops.

The theme of the conference was "Advancing Professionalism" and some of the outstanding keynote speakers included Dr Joel Nobel, founder of ECRI, Dr Elliot Sloane from Villanova University and Professor Yongmin Kim from the University of Washington.

One of the sub-themes of the conference was the convergence of clinical engineering and IT and many of the keynote and invited speakers addressed the issues involved. A BME-ICT workshop on Wednesday rounded off these discussions.

Other themes included clinical biomechanics, volunteering in developing & recovering countries, technical education, local developments and some crystal ball gazing into the future of BME. Technical papers from many contributors rounded out the week and were of a high standard.

An extensive trade exhibition was again a feature of the conference. Stands from the major manufacturers featured the latest developments in medical equipment and provided ideas for the next "must have" piece of medical equipment.

The social programme and networking amongst peers completed the picture at a very successful conference.



Join us for EPSM – ABEC 2008 in Christchurch, NZ from 16 to 20 November.

Check it out at:

[www.uco.canterbury.ac.nz/conference/epsm-abec](http://www.uco.canterbury.ac.nz/conference/epsm-abec)

### *About Our Organization...*

Engineers Australia is the national forum for the advancement of engineering and the professional development of our members. With in excess of 80,000 members embracing all disciplines of the engineering team, Engineers Australia is the largest and most diverse professional body for engineers in Australia..

It has Divisions in each State and Territory, as well as in Newcastle and Canberra. It also has 8 discipline-specific Colleges which cover the full range of engineering disciplines, National Panels and Committees, Technical Societies and Special Interest Groups. Biomedical Engineering has groups dedicated to [Clinical Engineering](#), [Rehabilitation Engineering](#), and [Biomechanics of Impact Injury](#).

For more information check us out on the Engineers Australia website at [www.engineersaustralia.org.au](http://www.engineersaustralia.org.au)