



AUSTRALIAN SOCIETY FOR BIOPHYSICS

Website address

<http://www.biophysics.org.au/>

Newsletter 2004/6

ASB News

Welcome to the **sixth** (and final) **ASB Newsletter for 2004**. It will also be my last newsletter, since the new **ASB President, Professor Boris Martinac**, will take over writing the newsletters in 2005. Note also that the new **Vice-President** (and President-Elect) is **A/Prof Brett Hambly**.

*Wishing you a very joyous
Christmas and New Year
Season*

I would like to extend my congratulations to all of you who were successful in the recent round of research grants and encourage those of you who were not successful this time, not to be discouraged, but to keep on applying for grants. To all those putting in grant applications next year, I wish you every success in the next round.

Please note the report on the recent **Fluoro 2004 Workshop** and information about the coming **Biomolecular Dynamics and Interactions (BDI) Symposium** at the University of Melbourne on **February 4, 2005** with the **early-bird registration deadline** closing on **10th December**.

Also for those able to go, please note the dates for the next **IUPAB Congress** in France from **August 27 – September 1, 2005** and **deadline for abstract submission** of **April 15th 2005** (see **Item 3 following**).

I would also like to let you know that **Peter Gage**, our **2004 Bob Robertson Medal Awardee** (see last ASB Newsletter - 2004/5), was able to have a bone marrow transplant at the end of November and to-date has been responding well. I am sure you would like to join me in conveying to him our best wishes and prayers for a full and speedy recovery.

Finally I would like to take this opportunity to wish you and your families and friends a very joyous Christmas and New Year season, an opportunity to recover from all the year's activities and stresses and a very worthwhile year in 2005.

With kind regards,

Peter

Peter H Barry, Immediate Past President, Australian Society for Biophysics

1. The 28th Annual Conference of the Australian Society for Biophysics

See previous newsletter for more details of this very successful ASB conference. Photos from the conference will soon be accessible from the ASB website.

2. Report on the Fluoro 2004 Workshop

The workshop was on the **Use of Optical Spectroscopic Techniques in Biomedical Research** and it was held in the National Marine Science Center, at the Coffs Harbour Campus of the University of New England, in NSW, Australia, from Sunday 19 - Thursday 23 September 2004.

Its aim was to provide training and practical experience in a range of optical spectroscopic techniques used in the biological and biomedical sciences. The general format was lectures in the mornings and practicals in the afternoons. The program covered such topics as: Introduction to Fluorescence, Instrumentation, Polarization/anisotropy, lifetimes, quenching, probes, fluctuation correlation spectroscopy, data analysis, luminescence in cell biology, and confocal techniques.

The workshop attracted approximately 70 registrants from around Australia and from overseas, the bulk of whom were research



All the workshop delegates outside the Marine Science Centre

students or recent postdoctoral fellows. There were several international participants from Europe, Asia (and one person from South America).

This workshop was very generously supported by:

- Australian Society for Biophysics
- International Union for Pure and Applied Biophysics
- Australian Society for Biochemistry and Molecular Biology
- Various commercial companies (Varian, BMG Labtech, Lasetek, Shimadzu, Invitrogen, GE Healthcare).

The bulk of the sponsorship was used to provide travel scholarships. Formal feedback is being obtained on the success of the workshop, but the anecdotal feedback obtained was that the workshop was an outstanding success.

The organizing committee consisted of Drs Pierre and Joelle Moens (Univ of New England), Drs Brett Hambly and Ron Clarke (Univ of Sydney).

Speakers included Drs Enrico Gratton (Univ of Illinois), Dave Jameson (Univ of Hawaii), Peter Fajer (Florida State Univ), Bill Sawyer (Univ of Melbourne), Andrew Clayton (Ludwig Institute), Greg Monteith (Univ of Queensland), Rob Learmonth, (Univ of Southern Queensland) and the member of the organizing committee.

3. European Biophysics Journal (EBJ) Papers from ASB 2004

It was encouraging to note that at least 18 people have taken up the offer to submit papers from this meeting for a special issue of the *European Biophysics Journal*, to be published in 2005.

4. Biomolecular Dynamics and Interactions (BDI) Symposium

The **BDI Symposium** is a special one-day symposium to be held on Friday February 4, 2005. This is a satellite meeting of the 30th Lorne Conference on Protein Structure and Function that will be held at the new Bio21 Molecular Science and Biotechnology Institute (Bio21 Institute) in the heart of Melbourne and is [receiving some sponsorship from the ASB](#). The symposium will coincide with the opening of the Bio21 Institute and feature several prominent international and local speakers. For more details and to register for the BDI Symposium please visit the following website:- <http://www.asnevents.net.au/biomolecular/>. Note that early registration has just closed, but that it is not too late for regular registration. Also note that there will be a prize for the best student poster. Please submit your poster abstracts to [Matt Perugini](#) (doc or rtf file, 1 x A4 page maximum, 12 pt font & presenting author underlined). The deadline for poster abstracts was Friday December 10, 2004.

5. ASB 2005

Canberra is on track as the venue for a combined meeting of the ASB with the [Australian Physiological Society \(AuPS; previously APPS\)](#), with **Dr Paul Smith** as the ASB local secretary, with help from Shin-Ho Chung, Angela Dulhunty and others. Dates are still being discussed. At present it seems [most likely](#) to be in [late September](#), to give people time to recover from IUPS in San Diego (March 31 – April 5) and IUPAB (Aug. 27 – Sep. 1).

6. IUPAB 2008 update

The next triennial **15th IUPAB Congress** will be in **Montpellier, France**, in **Aug/Sep 2005** (see Item 5 in the following section). Note abstract deadline of **April 15th 2005**.

7. Australian Academy of Science News

For general Academy news see their website at <http://www.science.org.au>. Their most recent newsletter is still No. 59, see <http://www.science.org.au/newsletters/aas59.pdf>. See also P. 6 of this newsletter.

8. Tax-exempt Donations Request for the R N Robertson Fellowship

A reminder that donations to the above fellowship fund are tax exempt. For more information contact Dr Hank Greenway (<mailto:hank@cyllene.uwa.edu.au>) or see ASB Newsletter 2004/2.

9. Please periodically check our ASB Website for any up-to-date news items

(<http://www.biophysics.org.au/>)

In addition for ASB members, if you have any images from your work that could be included, please consult Adelle (<mailto:A.Coster@unsw.edu.au>).

Meeting Reports & Other News

ASB members, from now on please keep Boris up-to-date with any other news. Contributions will be very welcome!

List of the Above and Other Upcoming Events follows

2005

1. The 21st International Conference on Magnetic Resonance in Biological Systems (ICMRBS 2005) from Jan. 16 to Jan. 21, 2005 in Hyderabad, Andhra Pradesh, India. The deadline for receipt of abstracts, registration, and housing have now closed. Please visit www.tifr.res.in/~icmrbs for details.

2. XXXV IUPS 2005 Congress – “From Genomes to Functions”

The web site for the 35th Congress of the International Union of Physiological Sciences (IUPS) has been updated and can now accept registration and housing reservations. The IUPS Congress will be held in San Diego, CA., March 31-April 5, 2005. See: <http://www.faseb.org/meetings/iups2005> for further details, **Attendees are encouraged to make their housing reservations early in order to secure your first choice of hotel room.** For further information about traveling to the US please visit: <http://travel.state.gov/visa>.

3. IUPAB 2005 Congress.

The next International Biophysics Congress will be held in Montpellier, France, on August 27 to September 1, 2005 as a combined meeting of the International Union of Pure and Applied Biophysics (**IUPAB, 15th Congress**) and the European Biophysical Societies' Association (**EBSA, 5th Congress**). The French partners are the Société Française de Biophysique and the Comité National de Biophysique.



All fields of Biophysics will be considered, from the molecular level up to integrated systems and organisms. Some Symposia are intended to lay emphasis on complex systems; with motto "Biophysics: the end of simplicity?" The Preliminary Programme and Schedule and general information are available on: <http://worldbiophysics2005.sfbiophys.org/>, the Congress Web Site. N.B. **The deadline for Abstract Submission will be April 15th 2005, and late registrations will be after May 2005.**

Notices & Special Reports - National News

FASTS (Federation of Scientific and Technological Societies) News

The minutes of the AGM and Council of FASTS have been appended to the end of this ASB Newsletter

2005 Science Meets Parliament – will now be held on **March 7 & 8, 2005**

Some Information from the Australian Academy of Science

This is advance notice of an **Annual Symposium** on 6 May 2005 on “Recent advances in stem cell research and therapies”.

Job Vacancies and Notices

We have implemented a Jobs page on the ASB website, which is being looked after very ably by Adelle Coster (<mailto:A.Coster@unsw.edu.au>). Please send notices to her.

Peter H Barry
Immediate Past President, Australian Society for Biophysics,
Dec. 13, 2004

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*Some information from the minutes of FASTS' AGM and ACM, held on November 24, 2004
and some recent reports from Bradley Smith have been appended after this page*

FASTS' Annual General Meeting and Annual Council Meeting

Both were held at CSIRO Forestry House, Yarralumla, Canberra, on November 24th, 2004.

FASTS' Office bearers present were: Snow Barlow (President), Rob Norris (Vice-President), Judy Mousley (Vice-President), John O'Connor, (Secretary, Mike Smith (Treasurer), Ken Baldwin (Policy Chair) and Bradley Smith (Executive Director).

Two of the main minuted items included a perspective from the newly elected **President-Elect, Professor Tom Spurling** (see separate report from Bradley Smith) and the **President's Annual Report** (circulated previously and appended to the last **ASB Newsletter 2004/5**).

Perspective from the President-Elect

Tom (Spurling) discussed the need to externally raise the public and private investment in R & D in Australia. Neither the government nor private firms have invested enough to underpin the sustainable growth of our economy. FASTS needs to persuade them to increase dollar input into the innovation cycle. Innovation is the driver of the economy and the government understands that but the cycle needs to be generated, transferred and accepted by the end users such as private firms. The key challenge for science & technology in Australia is to attract new private sector investment into innovation - BAA (*Backing Australia's Ability*) has not been successful in raising the level of research in the private sector.

Internal matters in FASTS also need to be addressed such as governance, finances and membership.

FASTS has a leadership role amongst key scientific bodies and can present opinions across the spectrum of science. A two-way interaction is required between FASTS and the government and FASTS and its Member Societies. Effective communication is necessary for success.

There is a need to broaden environmental issues and encourage public good funding. The innovation cycle must allow knowledge transfer and utilisation by the end users. In terms of public good research, it is the government who will benefit. Thus, Federal and State governments need to implement the results of public good research. Defence research should also be considered.

Regarding membership, there are many societies which could be approached (Aus Biotech, Society of Nanotechnology etc) and a concerted effort should be made to attract them to FASTS.

Separate edited reports from Bradley Smith, Exec. Director, FASTS

Nov. 24, 2004 (*Bradley Smith*)

At the FASTS AGM, held in Canberra on Nov 24, 2004, **Professor Tom Spurling** was elected **President-elect of FASTS**. He will serve as President-elect for one year and become **President in 2006-7**. He is currently Dean, Faculty of Engineering and Industrial Sciences, Swinburne University of Technology. His previous positions include: Professor of Molecular Science and Director, Industrial Research Institute Swinburne, Swinburne University of Technology; Principal Advisor CSIRO Molecular Science, Chief, CSIRO Molecular Science, Chief, CSIRO Chemicals and Polymers. He is an Elected Fellow - Royal Australian Chemical Institute, Elected Foundation Fellow - Federation of Asian Chemical Societies, Elected Fellow - Australian Academy of Technological Sciences & Engineering and Elected Fellow - Australian Institute of Management.

In addition to a strong academic and publications record, he has extensive experience with commercialisation and technology transfer issues including being a director of two technology-based firms.

Professor John O'Connor was elected as Secretary and Mike Smith as Treasurer of FASTS.

Nov. 25, 2004 (*Bradley Smith*)

As part of BAA2 (*Backing Australia's Ability2*), the Government announced it would be changing funding arrangements for research infrastructure taking into account the comments and recommendations of the 2003/4 National Infrastructure review which was released in March this year.

The Government are establishing the National Collaborative Research Infrastructure Strategy (NCRIS). The advisory committee for NCRIS are holding a series of consultations with the sector starting Nov 29th through Dec 14th, 2004.

It is intended that a Strategic Roadmap and NCRIS funding guidelines be released in June 2005 after consultation period and submissions process.

The timelines for NCRIS are

- Consultation visits - November 2004-December 2004
- Written submissions due - February 2005
- Further development of 'Strategic Roadmap' - February – March 2005
- NCRIS funding guidelines issued - June 2005
- Strategic Roadmap published - June 2005
- Identification and development of *initial* investment priority projects - July 2005-June 2006
- NCRIS project funding - July 2006-July 2011

The advisory committee has also provided a consultation paper to guide discussions and subsequent submissions.

FASTS will obviously be attending the consultations and will make a submission, however members may also like to participate.

Nov. 29, 2004 (*Bradley Smith*)

As part of BAA2, the Government announced it would be establishing a 'Quality and Accessibility Framework for Publicly Funded Research'.

It is proposed to develop two frameworks;

1. a quality assessment of research (somewhat analogous to the Research Assessment Exercise (RAE) of the UK), and
2. an accessibility framework to ensure dissemination of research to researchers and the community.

The idea is to improve transparency and quality and relevance of research. Whether this process arrives at a new model of resource allocation is yet to be determined. DEST argue in their public briefings that they are well aware of the problems of measuring quality and have stated that it is by no means certain that a resource allocation model will be the objective. Frankly I find it difficult to believe that something of this nature will not be the outcome.

The process includes establishing an expert advisory group, discipline specific and cross-disciplinary workshops, issues papers, submissions and eventually recommendations to the Minister in December 2005.

A couple of days ago the Department established a website to keep people up to date with developments. This can be accessed at <http://www.dest.gov.au/resqual/default.htm#1> – currently there is some brief notes on the site describing rationale and process.

FASTS will be playing a role in this and we will keep you posted on events, issues papers etc as they occur.

This is likely to be a contentious process as disciplines and modes of research do have rather different practices and it is inevitable that any quality framework will privilege some forms of research activities over others with intended and unintended consequences.

On another matter, the forthcoming review of indexation of university grants (as promised in the argy-bargy over the higher education legislation last year) seems to be an inhouse operation

for DEST and it is not at all clear what consultations, opportunities for input will occur. Both AVCC and NTEU have expressed concern.

Dec 2, 2005 (*Bradley Smith*)

APPOINTMENT OF SCIENCE AND RESEARCH ADVISER

2 December, 2004 MIN 1019/04

I (Brendan Nelson) am pleased to announce that Dr Jade Sharples has accepted an appointment as my Science and Research Adviser.

Dr Sharples is a researcher and science policy analyst with a highly credentialed background.

Dr Sharples commenced her studies in the Biological Sciences at the University of Western Sydney (UWS) before going on to complete her PhD in Biology at UWS and the Institute of Terrestrial Ecology at Monkswood, United Kingdom.

Dr Sharples is also a qualified lawyer, with specific experience in the area of intellectual property analysis and protection for scientific research.

More recently, Dr Sharples managed the science portfolio for the British High Commission, providing her with broad exposure to international science and innovation policies.

In addition to her role as my Science and Research Adviser, Dr Sharples will also provide a contact point within my office for peak science bodies, research agencies and the broader scientific community. Received from: Dr Brendan Nelson's Office.

Dec 6, 2004 (*Bradley Smith*)

Hype Hides True Worth of Everyday Research

Australian Financial Review(AFR) 6 December 2004.

By **Professor Snow Barlow**, President FASTS

Peter Roberts says Australians do not understand the difference between invention and innovation (*Industry Needs Bright Sparks*, AFR 29 November 2004).

Invention, he states, is the preserve mainly of scientists in public sector research and innovation of engineers and technologists in industry.

Provocatively, he asserts that Australians from the Prime Minister down, are 'smugly satisfied' with over-achieving academic R&D but do not understand we invest too much into inventions and not enough into innovations.

"We must not confuse the money we are pouring into universities, the PhDs we graduate, or the scientific publications they produce with innovation that has economic benefit" he states.

Conflating science and invention is a dangerous over-simplification. In reality, invention of new products is only one of many outcomes from science that produce real economic benefits.

A typical example is a change in wheat farming practices in WA (which produces 60% of Australia's \$5 - \$6 billion wheat crop). For many years, farmers timed their planting to avoid late frosts that occur, on average, every ten years. However, this exposed them to crop loss through spring drought. In short, to avoid one in ten year frost risk farmers exposed themselves to drought every year.

Evaluation of climate records by Henry Nix and others showed that planting earlier would reduce overall climate risk. As a result, scientists have developed an agronomic package incorporating the unique climate and soils of the WA wheat belt that has increased productivity by about \$500m a year.

This straightforward but significant innovation grew out of knowledge from basic research even though there is no patent or invention in sight. Moreover, innovations of this nature – non-patentable improvements derived from public sector research - are commonplace throughout Australian industry. Ironically, we lose corporate memory of how such innovations occur as the improved practices become accepted as common sense.

There are growing demands from Government for researchers to provide 'silver bullet' inventions that create new jobs and export opportunities. No one disputes the desirability of this

avenue of commercialisation, however, a downside is economic benefits, which do not involve 'widgets to market', are under-valued or ignored.

We are all fascinated by 'gee whiz' big impact science but new disruptive technologies that truly transform sectors, societies or economies such as personal computers are far rarer than we might think.

Consequently, expectations are distorted by a failure to appreciate the majority of scientific research goes to incremental innovations in existing sectors and technologies. Ongoing innovations that deliver productivity gains are necessary just to maintain status quo let alone greater market share in a competitive environment.

There is a rich synergy between invention and innovation. Constructing them along public private distinctions is not only misleading but does no favours for real understanding of the dynamics of economic development.

Scientists at CSIRO, DSTO and three universities have collaborated with a cable manufacturer to develop a new electricity cable designed to withstand fires. The heart of this technology is a flexible polymer that becomes a ceramic under fire conditions preserving the integrity (and safety) of electrical wiring. This advance is now in domestic production and has already replaced a less capable imported product.

This specific dynamic interplay between invention and innovation and public and private sector is totally dependent on basic research into polymers, ceramics and electrical properties.

Without that basic science – and the public sector investment that sustains it - you simply cannot do this sort of innovation.

Mr Roberts is right to focus on Australia's relatively poor record in industry R&D but before advocating shifting public sector investment in R&D from universities and CSIRO directly to industry, it is time we asked the tough questions of industry.

What effect does linking CEO salaries and bonuses to short-term dividends or stock market prices have on long-term planning, strategic investment and company growth?

Why are Australian firms generally slow to take up innovations?

Why are Australian industry and financial institutions generally risk-averse?

There is no certainty that robbing Peter to pay Paul is going to deliver better outcomes, particularly if we do not tackle the cultural factors that inhibit private sector R&D. Indeed, such a strategy may be little more than business welfare providing worse outcomes given public sector research is characterised by spillover benefits that reach far beyond any particular enterprise.