



australian institute of biology

# Newsletter

*Interim Issue, February 2006*

## *In This Issue:*

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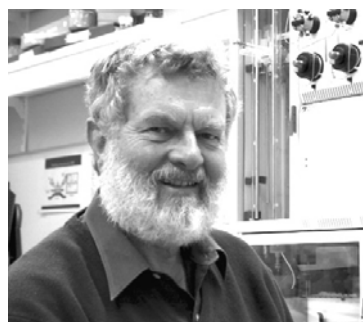
- Past President's Report
- New President's Report
- Bulletin Board
- Human Genetic Information
- News From FASTS and the Australian Academy of Science
- Intelligent Design – a hot potato?
- Honours for Institute Members
- Science meets Parliament 2006
- Nanotechnology in Australia – 2006 – Government Plans
- Executive Committee 2005-2006

## Immediate Past President's Report

In my last President's report I wrote, "in the face of competition from a number of academic societies, many with professional staff, the Institute has a mountain to climb if it is to survive, and I felt I did not have the time to do what was necessary. In the absence of a central professional secretariat it is very difficult to run a National organisation from Perth, both because of our geographic isolation as well as the small membership."

I am pleased to say that a group from Victoria has nominated and was elected unopposed at the AGM. I hope they can achieve what we could not achieve and reverse what Tim Glover referred to as "rather lethargic at present if not in danger of becoming moribund".

It will not be an easy task. At the AGM there were nominations for State representatives only for NSW and the ACT, leaving the other States unrepresented. If the AIBiol is to remain a National body it is important that it is active in all States.



*Professor Colin Sanderson  
Immediate Past President*

I would like to thank the Perth executive, especially Alan Needham, John Finlay-Jones and Don Bradshaw for their support during this very difficult period. I convey my support and best wishes to the new President, Lance Lloyd and his executive. I ask all members to actively support the Institute to ensure that the new executive is successful in rebuilding the AIBiol into a vigorous and influential body.

**Colin Sanderson**

## President's Report

I am pleased to have become the new AIB President late last year. You would have received your renewal notice, and some of you (with current email addresses) will have received an email with similar information to this article. A new Executive is in place, and is already acting to ensure a fresh start for the Australian Institute of Biology. This interim newsletter is aimed at informing all members of recent actions and providing some information which will be of some interest and use.

### **What is happening at the AIB?**

Your executive committee has already met twice and have developed some initial and urgent tasks. These include:

#### **1. Newsletter in early 2006**

Our Newsletter Editor, Evan John, has agreed to continue in this role and we have begun developing copy and information – any input is welcome – please email your information to any committee member or Evan at: [evkayd@picknowl.com.au](mailto:evkayd@picknowl.com.au)

#### **2. Membership survey**

We are developing a membership survey to gain a better understanding of your needs and the role of AIB - it will be available early in 2006

#### **3. AIB Strategic Plan**

This is under development - your committee has begun to review the AIB's functions and benefits to members in order to provide a better service to members

#### **4. Updating the AIB Website**

A new structure and design for the website has been prepared and we are updating the content to improve its usefulness as a membership resource (we will email you when the site is updated).

Look out for your information bulletin "Under New Management" in the mail and if you know other AIB members who have not received this email or the information bulletin, please pass these along to them and alert your executive with their current contact details.

We look forward to your renewals so we can implement various actions to improve the AIB and its benefits to you as members.

#### **4. Updating membership**

The AIB is trying to update the details of its members. In particular, we are trying to get an accurate list of email addresses as we intend to set up a members-only email discussion list. This is so we can alert you when this page changes and to keep members informed of events. Please note that this information will be kept private, and we will not pass this information to any third parties. Also, if any of your other details have changed, please tell us about them as well. This information can be sent to the Secretary (Ian Rose) at [ian.rose@middletons.com.au](mailto:ian.rose@middletons.com.au).

Ensure that you include your full name with this information, so that we can find you in our member database.

## Bulletin Board

- **Evolution named 2005's top breakthrough**

The journal *Science* has proclaimed evolution the breakthrough of 2005. The journal's editors say wide-ranging research published this year, including a study that shows a mere 4 per cent difference between human and chimpanzee DNA, builds on Charles Darwin's landmark 1859 work *The Origin of Species* and the idea of natural selection. "Amid this outpouring of results, 2005 stands out as a banner year for uncovering the intricacies of how evolution actually proceeds," they wrote.

Mr Kennedy said. "The journal picked evolution as the year's biggest breakthrough in part because it was a "hot topic" (referring to the 'intelligent design' proposals), but stresses there is a wealth of research that justifies the choice.

Other breakthroughs in the journal's top 10 include research in planetary exploration, the molecular biology of flowers, the violent ways of neutron stars, the relationship between genetics and abnormal human behaviour, the new field of cosmochemistry, a protein that controls the flow of potassium ions to cells, fresh evidence of global warming, an engineering approach to molecular biology and superconductivity.

The journal says areas to watch for in 2006 include the avian flu, ultra-high-energy cosmic rays and the possible sighting of the ivory-billed woodpecker, long presumed extinct but rediscovered in 2004.

- **Our flavours and aromas are world beaters for wine drinkers!**

Research to identify the compounds that contribute to wine aromas and flavours is helping Australian winemakers craft wines to match the preferences of consumers around the world. Supported by the Grape and Wine Research and Development Corporation (GWRDC), part of the research effort traces wine characteristics back to compounds that are present in grapes, or which are created during the winemaking process.

The GWRDC-funded researchers also work beyond the laboratory, testing, monitoring and responding to the wine flavours preferred by consumers, and providing the insights they gain to our winemakers.

This work on wine aromas and flavours is largely responsible for the international popularity of Australian wines. And the more the world's wine lovers appreciate our wines, the more this GWRDC-supported research adds to the nation's economic strength.

- **Counting the cost: Science policy threatens nature's riches.**

A group of leading biologists are starting a campaign to develop a National Institute of Taxonomy to fill an urgently needed skills gap in Australian science, as outlined in a feature article in the January/ February issue of *Australasian Science*. Such a Federal Institute would provide positions for appropriate scientists in existing institutions. A sum of \$10 million annually would support 20 permanent science positions.

**Professor Mike Archer** (Dean of Science at NSW University and previously Director of

the Australian Museum) is a researcher into past and present Australian terrestrial fauna. He comments: " How can we know what species we are losing if we don't even know what we have?"

**Dr. Patricia Mather AO** of the Queensland Museum is a distinguished taxonomist who has described over 500 new Australian marine animals - species that would otherwise not be known and that are now being studied for their clinical potential. She states, "Modern biological science, including genetic and molecular biology, promises great rewards but it is useless unless species are described, recognizable and better known."

**Professor Frank Talbot** (Director Emeritus of the US National Museum of Natural History at the Smithsonian Institution and past Director of the Australian Museum), a marine biologist, says, "Australia has a mass of unique organisms, but because we know so little about them we don't know what we are losing, and we don't even know what alien species are arriving to oust our unique native ones."

We continually talk of the earth's rich store of species and how new genes and medicines are going to improve our lives, but the science that describes them - taxonomy - is steadily going down the gurgler. The losses from invasive species are already large and are increasing; but the losses from being unable to gain from our unique biodiversity will be much greater.

There are now few experts capable of defining new species or distinguishing native from invasive ones. Positions for such scientists are reducing, not increasing, which is remarkably short-sighted. We urgently need jobs for taxonomic scientists - real jobs with career possibilities - not just short term positions.

Further comments would be appreciated!

**Pat Mather** (07) 3831 1489 (H)

(07) 38407710 (W)

**Mike Archer** (02) 9344 8704

**Frank Talbot** (02) 9427 2664

Mob. 0425 325 306

- **2006 Prime Minister's Prizes for Science**

Nominations are now open for the 2006 Prime Minister's Prizes for Science. **The closing date for nominations is Friday 19 May 2006**

Nominations are being sought for any of the following five (5) prestigious awards:

Prime Minister's Prize for Science \$300,000,  
Science Minister's Prize for Life Scientist of the Year \$50,000, Malcolm McIntosh Prize for Physical Scientist of the Year, \$50,000  
Prime Minister's Prize for Excellence in Science Teaching in Primary Schools, \$50,000, Prime Minister's Prize for Excellence in Science Teaching in Secondary Schools, \$50,000

Information about the Prizes and the online nomination process is available on:

**<https://sciencegrants.dest.gov.au/scienceprize/pages/home.aspx>**

<https://sciencegrants.dest.gov.au/scienceprize/pages/home.aspx>

**For more information please contact:** Kelly at the Science Prizes Secretariat, Department of Education, Science and Training

Tel: (02) 6240 5066 Fax: (02) 6123 6168

Email: [pmprize@dest.gov.au](mailto:pmprize@dest.gov.au)

- **The importance of Science**

At last year's SmP, Robyn Williams interviewed a number of Parliamentarians about their views on science and science meets Parliament. Excerpts of comments on the importance of Science made at that meeting by Julie Bishop, the now Federal Minister for Education, Science and Training

were replayed on the Science Show, ABC Radio National, 28th of Jan 2006. The transcript is produced below, and makes interesting reading.

## Program Transcript

**Robyn Williams:** Australia has a new Minister of Education, Training and Science, she's Julie Bishop and she already has a terrific reputation. Here she is on scientists.

**Julie Bishop:** In my first year as a member of the House of Representatives, I was approached by the Science Meets Parliament organisers who said, Would you like to meet some of the scientists? What we're trying to do is enhance Members of Parliament's knowledge about the value of science to our community. And I thought what a wonderful initiative, scientists coming to meet politicians, you couldn't find two more diverse groups. And every year I found it worthwhile meeting scientists one on one, talking about the work that they do and exchanging ideas. I think it's been a most valuable initiative.

**Robyn Williams:** And here's Julie Bishop on preparing for the burgeoning information society, as it's called.

**Julie Bishop:** Well, I think many sides of the community are overwhelmed with information. When you talk about the Internet, well, so many of us now seem to assess our own health condition and what's wrong with us by looking up the Internet. And that's one of the problems I guess with coming across a new area that you need to get on top of. What would be ideal is if I had a better background in science. Now I tended to do liberal art subjects at school, I wish I'd paid more attention to the physics, chemistry, basic science, and so my word for students going through primary or secondary school is: focus on the science subjects because you

never know when you're going to need it and rely upon it.

**Robyn Williams:** And finally, Julie Bishop on whether there's any kind of job you can do in the 21st Century without some background in science.

**Julie Bishop:** Essentially, no. Not only from the high end IT perspective but any job, wherever you're working you must have some understanding of the environment around you and science is all around you. So when you put it down so simply, I suspect that there's not a job, there's not a career path that you could have that would not involve some fundamental understanding of science. But then of course, there'll be so many jobs in the 21st Century that will involve a much higher level of appreciation, understanding and application of scientific principles.

**Robyn Williams:** And I suppose you'd have more than one job, you'll have about 20 different careers in this varied life?

**Julie Bishop:** That seems to be the trend and we're seeing younger people seeing it as a matter of some pride that they've had a number of jobs, whereas in the past it used to be a job for a lifetime. But now people must be more flexible, more innovative, more creative in what they do.

**Robyn Williams:** Julie Bishop on the Science Show last year when she was Minister for the Aged. As of this week she's the new Minister for Education, Science and Training. Welcome.

- **Ig Nobel Prizes 2005**

A specific reference to the 2005 Ig Nobel Biology prize winner, our former President, Associate Professor Mike Tyler, has been made later in the AIB honours section of this newsletter. However, it is amusing to note the types of projects for which some other category winners received prizes.

**The Ig Nobel Medicine prize** went to the US inventor of 'neuticles', artificial dog testicles, available in three sizes and three degrees of firmness.

**The Chemistry prize** was awarded to two US researchers who explored whether people swim faster in syrup or water.

A Japanese researcher won **the Nutrition prize** for photographing and analysing every meal he ate over 34 years.

Two German-based researchers won the **Fluid dynamics** prize for calculating the pressure that builds up inside a penguin when it defecates.

## The Protection of Human Genetic Information – the Government Response

### **Government Response to recommendations of the Australian Law Reform Commission and Australian Health Ethics Committee Report *Essentially Yours: The Protection of Human Genetic Information in Australia***

The key recommendation is to relax the current regulatory regime to permit somatic cell nuclear transfer (sometimes referred to as therapeutic cloning) should be permitted in specific circumstances.

#### **INTRODUCTION**

The inquiry into the legal and ethical issues surrounding the protection of human genetic information was conducted pursuant to a joint reference to the Australian Law Reform Commission (ALRC) and the Australian Health Ethics Committee of the National Health and Medical Research Council (AHEC) by the former Attorney-General and the former Minister for Health and Aged Care.

The focus of the ALRC/AHEC inquiry was the rapid advances in human genetic technology. The inquiry was prompted by concerns about privacy and discrimination, especially in the contexts of insurance and employment, and about ethical and other

oversight of medical and scientific research, clinical practice, and the use and collection of genetic databases.

The use of gene technology poses sensitive legal and ethical dilemmas. It also provides an exciting opportunity to use technology wisely to improve the human condition. The challenge is to obtain benefits from genetic information without compromising the personal privacy we value and expect our society to protect.

The ALRC/AHEC inquiry sought expert advice on the diverse areas of law and medicine dealt with in the report, *Essentially Yours: The Protection of Human Genetic*

**Information in Australia.** It established an advisory committee, working group and panel of consultants.

The report has also been informed by an extensive consultation process, with the ALRC and AHEC holding open forums and meetings with interested parties in Australia and overseas. The report followed publication of an issues paper and a discussion paper. Over 300 written submissions were received from the general community as well as experts and interest groups.

### **The Report**

The ARLC/AHEC report contains 144 wide ranging recommendations covering information privacy, protection against unfair discrimination in employment and insurance, the use of genetic information in forensic investigations and parentage testing and ensuring the highest ethical standards in medical research and practice. The recommendations in the report are directed at Commonwealth, State and Territory governments as well as statutory authorities.

In preparing its response, the Government has considered carefully the recommendations that are directed to it. The recommendations affect many Australian Government agencies. It has also written to State and Territory governments, drawing their attention to relevant recommendations.

The Government has already taken action on some recommendations. Other issues are also being considered, in collaboration with State and Territory Governments, through the Standing Committee of Attorneys-General and the Australian Health Ministers' Conference. Key themes of the report and the Government's response are addressed below.

### **A Human Genetics Advisory Committee**

One of the key recommendations in the report is that a statutory body be established to provide advice to Australian governments about current and emerging issues in human genetics. The Government has agreed to establish an independent expert advisory body on human genetics. The Government will provide new funding of \$7.6 million over four years from 2005-6 to establish the body as a principal committee of the National Health and Medical Research Council. The Committee will provide on-going advice to government on high-level technical and strategic issues in human genetics.

### **Regulatory Framework**

Genetic information is a type of information, but it is not a totally new type of information. It is a more sophisticated form of information that we have been dealing with for a long time, such as in blood tests, fingerprinting and physical observation of familial characteristics. Some genetic information is shared with our family members, referred to in the report as genetic relatives.

The Government agrees with the report that a separate regulatory regime for genetic information is unnecessary (see report pp140-1). Instead, it considers that genetic information should remain within the protective framework that the *Privacy Act 1988* (Cth) provides. It agrees that genetic information should be characterised as 'sensitive information' under the Act. This means that the uses, manner of collection and storage of such information will be given additional protection under the Act.

However, the Government acknowledges that additional legislative protection may be required to ensure appropriate safeguards in the uses that may be made of genetic information. For example, the Government has accepted recommendations 7-4 and 7-5 to fine tune the definitions of 'health' and 'sensitive information' in the Privacy Act.

The fundamental concept that the Privacy Act does not prevent a person consenting to disclosures or uses of their personal information remains. This means that an individual may consent to his or her own genetic information being used for valuable research.

The Government also agrees that in the area of discrimination, any potential misuses of genetic information should be dealt with within the existing context of the *Disability Discrimination Act 1992* (Cth) (see report page 301). This approach is consistent with the general approach that a separate regulatory regime for genetic information is unnecessary.

### **Ethical Guidelines for Genetic Testing and Human Genetic Research**

The Report proposes improving and strengthening ethical guidelines, including those made by the National Health and Medical Research Council (NHMRC). Ethical guidelines are instruments which do not have the force of legislation and are traditionally used by professional associations to govern the behaviour of their members. The NHMRC has indicated to the Government that it is already addressing the report's recommendations in its review of the *National Statement on Ethical Conduct in Research Involving Humans* (the National Statement).

### **Parentage Testing**

The report makes a number of recommendations dealing with genetic testing for parentage. The report's main concern is that testing is regulated to ensure the highest quality technical and ethical standards. The Government response notes that recommendations dealing with consent, counselling and single parent testing will be considered by the National Association of Testing Authorities, Australia (NATA) in its

review of accreditation requirements. The Government does not consider that additional legislation is needed to regulate testing as there is already a strong accreditation system in place where test results are used in family law or immigration proceedings. As noted in the response, the Government is currently reviewing the relevant family law regulations in conjunction with the NATA review of accreditation requirements.

### **Criminal Law and the use of DNA**

The report makes recommendations about the forensic uses of genetic information. It discusses the use of DNA material in criminal investigations and proceedings. It recommends the creation of a new criminal offence for testing a person's genetic material without consent. The report also discusses how DNA material can assist in the identification of deceased persons. DNA identification played an important role in the identification of victims of the Bali nightclub bombings on 12 October 2002. The report discusses the Australian Government's 'rapid and effective' establishment of a new DNA database for disaster victim identification in the aftermath of the bombings. It also discusses how the national DNA databases are operating.

The report highlights the importance of national co-operation and harmonisation of criminal laws relating to the storage and forensic uses of genetic information. The Government has already implemented some recommendations.

It agrees that harmonisation of the laws is vital. It has been working with State and Territory Governments on the recommendations and has referred matters raised by the report to the Standing Committee of Attorneys-General and Australasian Police Ministers Council Joint Working Group.

The Government has already implemented some recommendations. It will be continuing this task through collaboration with other organisations such as the National Association of Testing Authorities, Australia. It will urge State and Territory Governments to implement the recommendations directed at them through the Standing Committee of Attorneys-General, and Australasian Police Ministers Council Joint Working Group. The Government will also encourage other

organisations that are the subject of recommendations to give them serious consideration.

The Government's full response to the recommendations of the Australian Law Reform Commission, Australian Health Ethics Committee report, *Essentially Yours: The Protection of Human Genetic Information in Australia* is available from: [www.lockhartreview.com.au](http://www.lockhartreview.com.au)

## Report on the Activities of FASTS (The Federation of Australian Scientific and Technological Societies)

### 1. FASTS Executive for 2006

At the Annual General Meeting in November 2005, the FASTS Executive for 2006 was elected.

**President:**

Professor Tom Spurling  
(CRC Wood Innovation)

**Vice President**

Associate Professor Judy Mousley  
(Deakin Uni)

**Secretary:**

Professor John O'Connor  
(Newcastle Uni)

**Treasurer:**

Graham Taylor  
(Industry consultant)

**Chair, Policy Committee**

Dr Ken Baldwin  
(ANU)

**Early Career Scientist**

Dr Matthew Hole  
(ANU)

**Ordinary Member**

Professor Alan Carey  
(ANU)

The work of the retiring members of Executive Snow Barlow (President), Rob

Norris (Vice President) and Mike Smith (Treasurer) was acknowledged.

Snow and Rob have both had very long and productive associations with FASTS.

### 2. Meet the new President of FASTS



**Professor Tom Spurling**

Tom Spurling received his BSc and PhD degrees in Physical Chemistry from the University of Western Australia in 1962 and 1966. He was a post-doctoral Fellow at the University of Maryland from 1965-1967 and a Lecturer in Chemistry at the University of Tasmania from 1967-1969. He joined CSIRO in 1969 where he became the Chief of the Division of Chemicals and Polymers in 1989

and the Chief of the Division of Molecular Science in 1997. He led the World Bank funded Management and Systems Strengthening-Lembaga Ilmu Pengetuhan Indonesia (MSS-LIPI) project in Jakarta from 1999-2001

He was appointed Professor of Molecular Science and Director of the Industrial Research Institute Swinburne in 2002 and was Dean of the Faculty of Engineering and Industrial Sciences at Swinburne University of Technology 2004-2005. He is now the Chief executive Officer of the CRC for Wood Innovations.

Tom is a Fellow of the Royal Australian Chemical Institute, a Fellow of the Australian Academy of Technological Science and Engineering and a Fellow of the Federation of Asian Chemical Societies. He was President of the RACI from 1987-1988 and of the FACS from 1989-1991. He will be the President of the Federation of Australian Scientific and Technological Societies for two years from November 2005..

### **3. Don't splurge surplus just on tax cuts.**

A number of sources have suggested that the \$3 billion upward revision of the Budget surplus released in December 2005, presents the government with an excellent opportunity to increase investment in future productivity growth, not just tax cuts.

The President of FASTS, Professor Tom Spurling, said tax cuts should not be the only consideration following the significant increase in the budget surplus.

“Long-term wealth is dependent on strong research and innovation.”

“The Government should resist the clamour to constrain the debate around the surplus to tax reform.”

“Tax cuts are but one way of spending the surplus”.

“There is compelling evidence that judicious

investment in R&D provides high returns to the economy and creates high skill, high wage jobs.

“A report released this week by Allen Consulting demonstrated that the Cooperative Research Centres have provided an additional 60 cents in every dollar invested by the Government over what would otherwise have been generated by other Government expenditures”.

“The size of the current and projected surpluses means there is no financial reason why the Government should not re-invigorate its investments in innovation and R&D”, concluded Professor Spurling.

### **4.CSIRO must make hard decisions**

FASTS have applauded CSIRO's attempt to map its research priorities announced in their research priorities for 2006/7 and beyond.

The President of FASTS, Professor Tom Spurling, said CSIRO has to make hard decisions as to where its medium and long-term research priorities lie.

“Criticism of CSIRO for changes to its research profile is misplaced when they ignore the national picture. No nation, let alone one institution, can cover all possible research paths”.

“It is vital that Australia has a strategic and co-ordinated approach to its research. What research should be done and who should do it, needs a higher level of oversight than CSIRO or any other research institution or university can provide.”

“But Australia does not have this capability. This means there is no real understanding of the effects when CSIRO, or programs such as the Cooperative Research Centres, change focus and direction. CSIRO is a comparatively small and reducing part of Australia's national research efforts, which in terms of

Government expenditure are at their lowest levels for 25 years as a percentage of GDP. Between 1999/00 and 2005/06, CSIRO's share of Commonwealth investment in R&D declined from 12.4% to 10.7%. this continues the trend of the past 25 years in which public sector research agencies have declined from 0.32% of GDP to 0.15% as Government focus has shifted to industry and university R&D," concluded Professor Spurling.

### Intelligent Design – a hot potato?

The concept of intelligent design has become quite a topical issue in the press in the past few months, and has had scientists and educators being quite vociferous in their beliefs about the place of "intelligent design" in School curricula.

Generally, most individuals will have made up their own minds about where they stand, but it is interesting to read the comments of a number of those who feel quite strongly about the issues involved. The following letter was published in October, 2005 in the Australian and other newspapers, with Michael Archer, Dean of Science, UNSW, Bradley Smith, Executive Director, FASTS , Sue Serjeantson, Executive Secretary AAS, and Paul Carnemolla President-Elect ASTA. as signatories.

#### **"Intelligent design is not science:**

"As Australian scientists and science educators, we are gravely concerned that so-called "intelligent design" (ID) might be taught in any school as a valid scientific alternative to evolution.

While science is a work in progress, a vast and growing body of factual knowledge supports the hypothesis that biological complexity is the result of natural processes of evolution.

Proponents of ID assert that some living structures are so complex that they are explicable only by the agency of an imagined and unspecified "intelligent designer".

They are free to believe and profess whatever they like. But not being able to imagine or explain how something happened other than by making a leap of faith to supernatural intervention is no basis for any science: that is a theological or philosophical notion.

For a theory to be considered scientific it must be testable - either directly or indirectly - by experiment or observation. The results of such tests should be able to be reproduced by others as a check on their accuracy (and, importantly, if repeated testing falsifies the theory it should be rejected rather than taught as part of the accumulating body of scientific understanding.)

Finally, a scientific theory should explain more than what is already known: it should be able to predict outcomes in novel situations. Evolution meets all of these criteria but ID meets none of them: it is not science. We therefore urge all Australian governments and educators not to permit the teaching or promulgation of ID as science. To do so would make a mockery of Australian science teaching and throw open the door of science classes to similarly unscientific world views – be they astrology, spoon-bending, flat-earth cosmology or alien abductions - and crowd out the teaching of real science.”

In the United States in December the Chicago Tribune reported a judge’s ruling against the teaching of “intelligent design”. Proponents of the concept had wanted it taught in public school classrooms in the USA.

In Overland Park, Kansas, in a broad and blistering landmark decision, a federal district court judge ruled it unconstitutional to teach intelligent design, a concept critical of neo-Darwinian evolutionary theory, in the nation’s public school science classrooms. Using scathing language that described the defendants as liars and their actions as "breathtaking inanity," Judge John Jones III rendered what many consider a watershed decision in the culture wars over the teaching of evolution, also ruling that intelligent design, or ID, is not a scientific theory but a religious belief. "In fact, one unfortunate theme in this case is the striking ignorance concerning the concept of ID amongst Board members.

Conspicuously, Board members who voted for the curriculum change testified at trial that they had utterly no grasp of ID," wrote Jones in his 139-page decision. It came 46 days after the close of *Kitzmiller et al. v. Dover Area School District*, a six-week bench trial heard in Pennsylvania’s Middle District Court in Harrisburg.

"Kitzmiller is likely to be regarded as the

Scopes case of the 21st Century--celebrated and lamented alike as the case that commanded not only the separation of church and state but also the alienation of religion and science," said John Witte, Jr., director of Emory University's Center for the Study of Law and Religion in Atlanta. He referred to the 1925 Scopes "Monkey Trial" pitting evolution against creationism in Tennessee classrooms.

Hailed as a major victory by the scientific community and dismissed as a temporary setback by supporters of intelligent design, Jones' decision is binding only on the Dover Area School District in central Pennsylvania, but it could have an impact on the way biology is taught elsewhere.

That includes Kansas, where the State Board of Education redefined science last month to include the supernatural, "and all the other school boards across the country that may be flirting with the introduction of intelligent design," said Richard Katskee, legal director for the non-profit Americans United for Separation of Church and State.

In 2005, more than 24 states and school boards have considered introducing intelligent design into their science curricula, according to the National Center for Science Education (NCSE), a non-profit group based in Oakland, California that is devoted to defending the teaching of evolution in public schools.

Eugenie Scott, executive director of NCSE said Jones' decision "will make it more difficult not only to teach intelligent design," but also to "teach the controversy approach," which aims at portraying evolution as a flawed theory in crisis

But some ID proponents were defiant. "Anyone who thinks a court ruling is going to kill off interest in intelligent design is living in another world," said John West, associate

director of the Center for Science & Culture at the Discovery Institute, a Seattle-based think tank that funds ID research.

"In the larger debate over intelligent design, this decision will be of minor significance," said Casey Luskin, Discovery's program officer for policy and legal affairs. "As we've repeatedly stressed, the ultimate validity of intelligent design will be determined not by the courts but by the scientific evidence pointing to design. But the evidence presented at trial for ID failed to establish it as a testable scientific theory," wrote Jones.

Although the most prominent advocacy group for intelligent design, the Discovery Institute opposes mandatory introduction of ID, as adopted by the Dover board, preferring that school boards take the "teach the controversy" approach regarding evolution, a controversy that the vast majority of scientists says is concocted.

Drawing media attention from around the world, the Dover trial marked the first legal challenge to ID, which opponents deride as thinly veiled religious creationism. ID posits that some complex aspects of the natural world, yet unexplained by evolution, best are attributed to an unnamed and unseen intelligent designer; most ID proponents believe that designer is God.

Evolutionary theory holds that all life on Earth, including humans, shares common ancestry and developed through the mechanisms of random mutation and natural selection. In science, a theory is not a wild guess but an explanation that ties together known facts and rigorously tested observations of the natural world. In December 2004, 11 parents of Dover Area School District students sued the district and its board. They contended the district's requirement that a statement be read to 9th grade biology classes denigrating evolution and introducing intelligent design violated the 1st Amendment's ban on state establishment of religion and the U.S. Supreme Court's 1987

ruling banning creationism from public school science classrooms in *Edwards v. Aguillard*.

First read to students in January 2005, the statement points out "gaps" in Darwin's theory "for which there is no evidence" and introduces ID as "an explanation of the origin of life that differs from Darwin's view." It then refers students to the ID textbook "Of Pandas and People" in the school library to gain "an understanding of what Intelligent Design actually involves."

The school board members, some of whom had spoken publicly of their creationist and religious beliefs before adopting the statement, testified in court that their motivation in requiring such a statement was purely secular and educational, not religious. Describing the board's decision to impose such a requirement as "breathtaking inanity," Jones said he found the assertion of a secular purpose a "ludicrous" pretext. He pointed out board members didn't consult any scientific authorities or even their own science faculty before crafting the statement. He also accused board members of lying, writing: "It is ironic that several of these individuals, who so staunchly and proudly touted their religious convictions in public, would time and time again lie to cover their tracks and disguise the real purpose behind the ID Policy."

In his ruling, Jones agreed with the parents, writing "ID cannot uncouple itself from its creationist, and thus religious antecedents."

Nearly universally opposed by mainstream scientists, ID is considered by many to have arisen as a way to get around the Supreme Court's ban on public-school teaching of creationism, a concept that adheres to the Biblical account of creation in Genesis. However, Jones also asserted the compatibility of faith and science, writing that the defendants and leading proponents of ID make a "bedrock assumption which is utterly

false ... that evolutionary theory is antithetical to a belief in the existence of a supreme being and to religion in general."

Dover's newly elected school board members, most of who support evolution, have indicated they probably will not appeal Jones' decision, erasing any chance of taking the case to the Supreme Court. But, despite the court ruling, neither adherents nor opponents of ID believe it will disappear anytime soon.

"We expect another change in labels, whether it's sudden emergence" or something else, said Eric Rothschild, of the Philadelphia firm Pepper Hamilton, who was among the attorneys representing the parents. "They're coming from the same sources. They're motivated by the same reasons." said Richard Thompson, president and chief counsel of the Thomas More Law Center, the Christian firm which handled the defense, in an earlier interview, "There will be other cases coming down the track."

The journal Science named Evolution as one of its 10 breakthrough topics of 2005, making the observation that "ironically, also this year, some segments of American society fought to dilute the teaching of even the basic facts of evolution." Journal editor-in-chief Don Kennedy acknowledges this is a reference to the rise of the theory of intelligent design.

Intelligent design holds that some aspects of nature are so complex that they must be the work of an unnamed creator rather than the result of random natural selection, as Darwin argued.

Opponents, including many scientists, argue it is a thinly disguised version of creationism - a belief that the world was created by God as described in the Book of Genesis. A US Supreme Court has ruled it may not be taught in public schools. "I think what arouses the ire of scientists (about intelligent design) is ... the notion that it belongs in the same universe as scientific analysis," Mr Kennedy said. "It's a hypothesis that's not testable, and

one of the important recognition factors for science and scientific ideas is the notion of testability, that you can go out and do an experiment and learn from it and change your idea."That's just not possible with a notion that's as much a belief in spirituality as intelligent design is."

## Special Honours for AIBiol Members

### **Frog-sniffing scientists win Ig Nobel**

Stressed frogs that smell like cashew nuts or curry, and a 76 – year - long laboratory experiment, have earned Australian scientists Ig Nobel prizes this year.

The 2005 Ig Nobel Prizes, which honour "achievements that first make people laugh, and then make them think", have just been presented by a team of Nobel laureates at a US gala ceremony at Harvard University.

**Associate Professor Mike Tyler's team from the University of Adelaide** won the Ig Nobel biology prize for its work on frog smells.

**(Mike Tyler was President of the Australian Institute of Biology from September 1995 to September 1977.)**

Associate Professor Tyler says each frog has a characteristic odour when stressed.

"Most of the tree frogs have odours which resemble either peanuts or cashew nuts," he said. "It's very sweet."

He says another group of frogs have a distinct curry smell. "In fact one is a sweet Bombay curry," he says. "And there's another one which is more like one of the north Indian chili-laden curries."

Associate Professor Tyler and team have also found about 20 frogs that

smell like cut grass and then "there are some rancid ones".

The researchers are not sure what all the smells mean but have found out that some of the chemicals behind them are responsible for killing mosquitoes.

They also found that some chemicals stop pigeons pooping on parapets and are already used as a bird repellent in London, Paris and New York.

### **Australia Day Honours**

Congratulations to former Australian Institute of Biology President, **Ian Falconer** for receiving an Order of Australia in this year's Australia day honours.

More can be found about Ian's honours at:

[http://www.nhmrc.gov.au/news/noticeboard/notice06/\\_files/recipients.htm](http://www.nhmrc.gov.au/news/noticeboard/notice06/_files/recipients.htm)

### **Recent Appointments**

In February 2006, **Professor Alan Johnson** assumes the role of Deputy Vice-Chancellor (Research), at The University of Adelaide.

Alan is a fellow of the AIB, and was previously Executive Director, Biological Sciences and Technology, at the Australian Research Council (ARC), He succeeds Professor Neville Marsh who has served in this capacity since December 2003.

"Professor Johnson brings a wealth of experience to the University and we are looking forward to working with him," said Professor James McWha,

Vice-Chancellor of the University of Adelaide.

"He has obtained invaluable experience at the ARC; he has played a significant role in strategic planning for the national research effort; and has co-ordinated the ARC's activities in the Biological Sciences and Biotechnology area, among numerous other achievements."

Professor McWha said Professor Johnson is an ideal appointment, who will maintain the University of Adelaide's position as a leading research-intensive university.

Professor Johnson holds a BAppSc from SAIT; a PhD (Flinders University); MA (Hons) (University of Wollongong); MEdMgmt (Flinders) and a DSc (Wollongong).

He has the rare distinction of being elected "Ehrenmitglied" by the Board

of the German Society for Parasitology. This honour has only been awarded nine times - his is the first to a non-German - and was received for "being a leading scientist in the field of phylogeny and immunology of apicomplexan parasites." He has maintained longstanding scientific co-operations and contacts with several German parasitology groups; and trained several German post-docs in his laboratory.

Congratulations must also go to Australian Institute of Biology Fellow **Professor Kerry Cox** who many will have known as an immunologist at Flinders University, South Australia, on his appointment last year as Vice Chancellor to the Edith Cowan University, Perth, W.A

## Science Meets Parliament, 2006.

Science meets Parliament 2006 is to be held over two days from 28 February to 1 March.

### **Day 1 Tuesday 28 Feb Briefing Day**

Held at the National Press Club in Barton, Canberra (about 7 min walk from Parliament House). Registrations will commence from 9.00am with a 10.00am start. The day will conclude at approximately 4.30pm. All participants are expected to attend the Briefing Day which will include a lunchtime address by the new Chief Scientist and workshops on science and the policy cycle.

In the evening there will be a gala dinner at Parliament House commencing at 7.00pm.

### **Day 2 Wednesday 1 March Science meets Parliament**

There will be a breakfast at 7.30am for early career researchers. Most participants will need to be at Parliament House by 9.00am. Most meetings with Parliamentarians will be in the morning but there will be quite

A few at 4.00pm. In addition there will be forums on at various stages throughout the day. So it is safe to assume that the day will conclude at

about 5.00pm although the formal meetings maybe concluded for many by lunchtime.

The topics selected for this year are:

- Biodiversity and habitat – Global warming adaptation, Biodiscovery, farming on marginal land
- Bio-security - protecting Australia from pests, diseases, weeds and microbes
- Brain research - understanding addiction and disease
- Climate change – global effects, carbon reduction, greenhouse
- Climate change – local impacts on health, native species, environment and agriculture
- Energy futures – renewables, nuclear, fossil fuel
- Frontier technologies - the science of industries that don't yet exist (but will sooner than we think !)
- Innovation, knowledge transfer and commercial use - improving adoption and mobility between industry and research
- Maximising adoption of scientific R&D in regional communities - getting ideas and people out there
- Minerals R&D – exploration, refining and export technologies
- Nuclear science and technology
- Obesity – public health, metabolic imbalance, demography, diet and psychological impacts
- Science, mathematics and technology education and career pathways
- Science/culture – the big public questions: Where do we come from? Cosmology, Evolutionary Biology, Paleontology
- Sustainable urban and coastal development
- The global and Australian challenge of emerging infectious diseases in humans, animals and plants.
- Water - oceans, rivers, reefs
- Youth mental health

## Nanotechnology and the Australian Government in 2006

### **A BIG STRATEGY FOR NANOTECH: THE INDUSTRY OF THE SMALL**

Big things are planned for the business of the small in 2006 with Australian Industry Minister, Ian Macfarlane, announcing in February the formulation of a national strategy for the development and regulation of the emerging field of nanotechnology.

"Nanotechnology is poised to change many traditional industries and over the next decade it is expected to become as influential in the 21<sup>st</sup> century as information technology, energy and computers were in the 20<sup>th</sup> century," said Mr Macfarlane. "Australia has an opportunity to be part of this world-wide movement towards smaller and greater efficiency in many aspects of

our daily lives, not only as a developer of the technology, but also as a responsible regulator of the field."

Mr Macfarlane has established a taskforce within his department to develop options for a national nanotechnology strategy, in consultation with industry, science and ethics specialists.

"Australia is already producing groundbreaking products which integrate nano-technology in items such as sunscreens, medical and environmental sensors, self cleaning paints and glass coating," said Mr Macfarlane.

"It is hard to imagine areas of our lives that won't be impacted by nanotechnology so it makes sense to have a co-ordinated national approach, with the state and territory governments, to making sure Australia is nanotech ready.'" "From an industry perspective we have to capture the commercial opportunities of developing this field but it's just as important that the environmental, health and social issues

are understood and properly monitored," he said.

Three Australian nanotechnology companies are:

**Advanced Nanotechnology,**

Perth, manufactures nanomaterials for the cosmetics and coatings industries.

Contact: Brian Innes 0400 320 033

**Micronisers,**

Melbourne, uses advanced milling and chemical process to produce nanomaterials for plastics and coatings.

Contact: Ken King 0401 977 088

**CAP-XX,**

Sydney, manufactures world-class super-capacitors for digital cameras, wireless devices and medical devices.

Contact: Anthony Kongats 0438 884 795

Information on the Nanotech Taskforce can be found at [www.industry.gov.au/nano](http://www.industry.gov.au/nano)

## From the Australian Academy of Science

The Department of Education, Science and Training provides a grant-in-aid to each of the four learned academies and to the National Academy Forum. The grant-in-aid guidelines call for a review of the scheme every five years. For the 2005 review, Minister Brendan Nelson appointed a three-person committee comprising Bruce Alberts (outgoing

President of the U.S. National Academy of Sciences), John Ralph, AC, FAA (Chair of the Australian Foundation for Science) and John Hay, AC (Vice-Chancellor and President, University of

Queensland). The committee met in Canberra on 17-18 September and interviewed representatives from the four academies.

The Minister has now received the review report and has written to say: 'I was pleased by the Review's positive report of the performance of the Australian Academy of Science as well as of the Academies more generally. The Government is considering the Review's recommendations for additional funding in the context of the 2006-2007 Budget.'

In recommending an increase in the annual grant-in-aid to the Academy of Science, the committee of review said: 'The main purpose of this increase is to allow the Academy of Science to continue and expand its programmes for outstanding early-career scientists.'

Of course, any review will find areas for improvement and the committee commented that the academies should raise the media profile of their work, policies and outcomes.

The committee went on to say: 'Despite a high volume of work in the public interest, the existence of the learned academies is relatively little known in the general community.' Council will have the opportunity to discuss this matter, and others raised by the committee, early in the New Year.

We were very pleased to receive a very professional, thoughtful and thorough review report that recommends that the learned academies be adequately resourced.

### **ACADEMY MEDAL AWARDED TO PROFESSOR MIKE GORE**

The Academy's Council has awarded the Academy Medal to Professor Mike Gore for his dedication to science education and the promotion of science. Through the establishment of Questacon, his vision has brought the excitement and wonder of science to countless children and adults, particularly through Questacon's outreach programmes that have taken interactive science exhibits to millions of people across Australia. The Medal will be presented to Professor Gore at the Annual General Meeting in 2006.

The Academy Medal recognises outstanding contributions to science by a person outside the Fellowship who has,

by sustained efforts in the public domain, significantly advanced the cause of science and technology in Australia or who has made a substantial contribution to the Academy.

### **SINO-AUSTRALIAN GRASSLAND WORKSHOP**

The Academy, with support from AusAID, hosted the Sino-Australian Workshop on the Management of Grassland-Livestock Systems and Combating Land Degradation in Northern China, 6-7 December 2005.

The meeting was opened by the President of the Academy, Jim Peacock, and the Chinese Ambassador to Australia, Madam Fu Ying. The aims of the meeting were to enhance communication and cooperation between Chinese and Australian scientists, provide a forum for identifying and discussing the root causes of grasslands degradation in China, sharing the lessons learned from efforts to fight it, and identify gaps and opportunities for new research and development programs seeking to address the problem.

There were several recommendations at the end of the workshop and team leaders were identified to start working on them. It is expected that a meeting in Beijing in February 2006 will further discuss ways to implement the recommendations.

### **PRIMARY CONNECTIONS**

*Primary Connections - linking science with literacy* is an important initiative for primary schools. Developed by the Academy in partnership with the Department of Education, Science and Training, *Primary Connections* promotes teaching science and literacy as complementary subjects to students aged 5-13 years.

Stage 3 of the project commences in 2006 with 100 education professionals gathering at the Shine Dome for a three day intensive workshop. The conference aims to assist representatives from each state and territory to engage with the unique *Primary Connections* teaching and learning model, as well as help them to prepare to train schools interested in using the programme.

The transition between trialling and national roll out will continue in 2006 as the Academy aims to: publish the first set of eight units; develop and trial future unit topics; develop a pre-service teacher education resource pack and continue with our programme of advanced professional learning for teachers. Further information on the project can be found at

[www.science.org.au/primaryconnections](http://www.science.org.au/primaryconnections)

### **LOCKHART REPORT ON HUMAN CLONING AND EMBRYO RESEARCH LEGISLATION**

The Chair of the Academy's National Committee for Medicine, Professor Bob Williamson, welcomed the release of the Lockhart report that reviewed the *Human Cloning Act 2002* and the *Research Involving Human Embryos Act 2002* that was released on 19 December 2005. The report is available at

<http://www.lockhartreview.com.au/public/content/ViewCategory.aspx?id=35>.

'The Lockhart Committee report should be welcomed by every Australian with commitment to medical research', said Professor Williamson.

'The recommendations will bring Australia into line with the United Kingdom and the U.S.A. We will be able to develop cellular models for common conditions, such as diabetes and

Parkinson's disease, using somatic cell nuclear transfer, something that is already being achieved in other countries. Because there will be an Australian Stem Cell Bank, we can ensure that the minimum number of embryos are used under strict conditions.'

'I am particularly pleased that these new and exciting experimental approaches will only be permitted in the context of a strict prohibition on cloning for reproduction. The community wants this guarantee that advanced medical research meets the highest ethical standards. Now that the debate is concluded, I hope that the Government adopts this carefully thought out set of recommendations without further delay.'

The Academy's submission to the review committee is available online at

<http://www.science.org.au/reports/25july05.pdf>.

**Dr W J Peacock**

**President, Australian Academy of Science**

[president@science.org.au](mailto:president@science.org.au)

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## About the New Executive

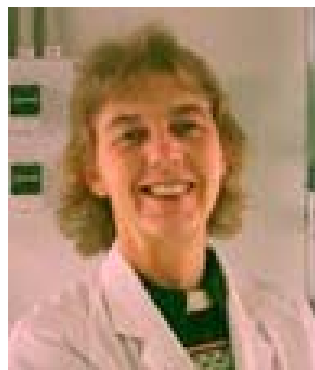
### Lance Lloyd (President)



Lance is a fish ecologist with 25 years experience in research, environmental consulting and the management of aquatic ecosystems. He established his own consulting business, Lloyd Environmental Pty Ltd, in 1998 and provides services for clients in the fields of environmental investigations, environmental flow assessments and R&D project and program management. His passion is for fish ecology and habitat conservation and he has published widely in fish ecology, water, wetland management and environmental management in scientific papers and management reports. Lance also has extensive experience working with stakeholders, community groups and professionals, to identify issues and solutions. He currently chairs the Translocation Evaluation Panel for the Dept of Primary Industries, Victoria. Lance has served on

state and federal government technical and advisory committees and has a long involvement in school councils in Victoria (8 years as President, 12 years as a member). He is a past President of the River Basin Management Society and is currently the (honorary) discussion list & web administrator for the RBMS.

### Ann Lawrie (Vice-President)



Ann Lawrie qualified with an Honours degree in Botany and a PhD in Plant Microbiology in the UK and has been in academic positions at universities in Australia since 1975.

She is currently Discipline Head, Biotechnology & Environmental Biology in the School of Applied Sciences at RMIT University in Melbourne.

She has coordinated undergraduate, honours and postgraduate courses for many years. Her areas of expertise are fungi and plants, with particular research interests in the use of molecular methods in soil microorganisms, especially nitrogen-fixing bacteria, mycorrhizae, plant pathology, and weeds. She has previously held office in the Society for Nitrogen Fixation and the Australasian Plant Pathology Society and is currently on the advisory group for orchid conservation for UNEP and DSE.

**Geoff Crawford (Deputy Vice – President)**



Geoff runs his own small consulting form in the broad areas of teaching and training and professional speaking. If he's not standing in front of people, he is writing docs such as quality, management etc. He also does a bit of HR work for another client as well as GMP consulting work. His background is as a virologist with work experience in industry and even as a lab manager of a path lab. He has a PhD in virology and some business qualifications. His business is called Access Academix and he works out of home in Templestowe.

**Ian Rose. (Secretary and Registrar)**



After five years as an Examiner of Patents, local and overseas, for the Australian Patent Office in the biotechnology area and six years in small to medium sized Patent Attorney firms, Ian Rose began his own practice in 1997, which then became Pipers' first Australian office in 1999. Currently, Ian is a Patent Attorney with Middletons in the biotechnology field. Before entering the intellectual property profession, Ian spent 15 years in medical research, firstly at Monash University's Alfred Hospital Department of Medicine and then in the University of Melbourne's Department of Medicine at Royal Melbourne Hospital. During this time Ian collaborated with other scientists and his research work was the subject of many publications in international refereed scientific journals. He also presented his research findings to numerous learned societies in Australia and internationally. Ian has extensive experience in relation to patents, trade-marks and designs and assessment of intellectual property portfolios. Ian regularly advises clients in a range of fields, particularly Biotechnology and Information Technology but also maintains an interest and practice in general inventions. Ian holds a Bachelor of Applied Science (Applied Biology) from the Royal Melbourne Institute of Technology. He has an LLB from Monash University, with specialist studies in intellectual property law which will form the basis of an LLM. He is currently completing

a Graduate Diploma in Legal Practice from ANU. He is a registered Australian Patent Attorney and registered Australian Trade Marks Attorney as well as a registered New Zealand Patent Attorney and a Fellow of IPTA (Institute of Patent and Trade Mark Attorneys of Australia).

concerned about conservation being a member and volunteer for EarthWatch.

### **Tom Holman (Treasurer)**



Customer and employee satisfaction specialist for over 10 years with a background in education and service improvement consultancy across many industries.

Tom has been a teacher at Melbourne Zoo, a science curriculum developer, chair VISE Biology Subject Committee, a branch manager for Rentokil, a state manager for Mayne Nickless and Principal of Customer Focus since 1992. His passion for service has extended to offices in the community with schools, professional bodies, zoos and museums. He has held the positions like President of the Australian Customer Service Association and Secretary of the Science Teachers' Association of Victoria. He has been an examiner for the Australian Customer Service Awards and HSC/VCE Biology. Tom now focuses on UltraFeedback in his professional life. He has specialised in the research, strategic development and implementation of customer satisfaction improvement since 1992. Specific expertise and capability exist in the development and delivery of Internet-enabled employee and customer satisfaction research, monitoring and benchmarking. He is also passionately