The Royal Society of New South Wales
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Future Events 2008

Lectures in Sydney are held in Lecture Room 1, Darlington Centre, University of Sydney at 7 pm on the first Wednesday of the month with drinks available from 6 pm.

Wednesday 5 November 2008

Professor Matthew England

Climate and Environmental Dynamics Laboratory, School of Mathematics, UNSW

The Oceans and Climate Change

Wednesday 3 December 2008

Liversidge Lecture

Professor Cameron Kepert

School of Chemistry, University of Sydney

Molecular Materials: From Clean Energy Storage to Shrinking Crystals

The Royal Society Christmas Party Wednesday 3 December, 8 pm

– don't miss out! See the included flyer for booking details or contact the Society's office.

The Pollock Lecture 2008

Please note that this lecture has been postponed until 2009.

Tuesday 28 October 2008, 6 pm

NSW AIP and the University of Sydney

Science in NSW schools – where to from here?

Gina Grant and Peter Osland, NSW Board of Studies, and Glen Sawle, NSW DET

Slade Lecture Theatre, School of Physics, Uni of Sydney;
Information: Fred Osman fred_osman@exemail.com.au

Wednesday 12 November, 9am-5pm

NSW AIP: 2008 Physics in Industry day

Nanotechnology: a catalyst for Australian manufacturing?

CSIRO Material Science and Engineering, Lindfield, Sydney

Information: http://www.nsw.aip.org.au/industry/industry.php or contact Scott Martin (02) 9413 7746 or scott.martin@csiro.au

Members, what topics interest you? Which scientists would you like to hear from? Please contact the Office with your ideas for our 2009 Lecture series (see p6).

Professor Matthew England

Lecture: Wednesday 5 November 2008

The Oceans and Climate Change

The oceans have always played a fundamental role in moderating global climate by transporting an excess of heat from the tropics to the poles. This occurs via global scale stationery eddies and a massive overturning of dense water at high latitudes. The oceans are also currently moderating climate change by absorbing massive amounts of heat and carbon. In addition, ocean circulation variations can have a profound impact on regional climate. Yet as the world's climate changes the moderating effect of the oceans will be dramatically reduced. In this talk I will outline the ocean's role in global mean climate and future climate change.

Other research directly relating to the oceans around Australia and the waters circling the Antarctic will also be explored. Twentieth century climate change has forced a poleward contraction of the Southern Hemisphere (SH) subpolar westerly winds. The implications of this wind shift for the ocean's thermohaline circulation (THC) is analyzed in models and, where available, observations. Substantial heat content anomalies can be linked to changes in the latitude and strength of the SH westerly winds. For example, the Southern Annular Mode projects onto sea surface temperature in a coordinated annular manner - with a conspiring of dynamic and thermodynamic processes yielding a strong SST signal. Subantarctic Mode Water (SAMW) change can be linked to fluctuations in the wind-driven Ekman transport of cool, low salinity water across the Subantarctic Front. Anomalies in air-sea heat fluxes and ice meltwater rates, in contrast, drive variability in Antarctic Surface Water, which is subducted along Antarctic Intermediate Water (AAIW) density layers. SAMW variations also spike T-S variability in AAIW, particularly in the southeast Pacific and southeast Indian Oceans. The location of zero wind stress curl in the SH can also control the distribution of overturning in the North Pacific/North Atlantic. A southward wind shift can force a stronger Atlantic THC and enhanced stratification in the North Pacific, whereas a northward shift leads to a significantly reduced Atlantic THC and the development of vigorous sinking in the North Pacific. This is because the distribution of wind stress over the Southern Ocean influences the surface salinity contrast between the Pacific and Atlantic basins. The implications of these findings for oceanic climate change are discussed.

Professor Matthew England is an Australian Research Council Federation Fellow and the Director of the UNSW Climate Change Research Centre (CCRC). England is a former Fulbright Scholar and winner of the Royal Society of Victoria Research Medal, 2007; two Eureka Prize (Environmental Research, 2006; Land and Water, 2008); the 2005 Priestley Medal and the Australian Academy of Science Frederick White Prize, 2004. England coordinated and led the 2007 Bali Climate Declaration by Scientists; a major international statement by the scientific community that specifies the reductions in greenhouse gas emissions required to minimise the risk of dangerous human-induced climate change (www.climate.unsw.edu.au/bali). England was a contributing author and reviewer of the Intergovernmental Panel on Climate Change (IPCC) Second and Third Assessment Reports. England is an expert in the ocean's role in regional climate variability and global climate change.

Professor Matthew England

From the President

Work on our Science for Science House project continues. With the realignment of ministerial portfolios in the current State government, we need to bring extra effort to bear on our cause. In addition, I will be visiting universities and other institutions around the state over the next couple of months seeking more formal institutional support for the initiative. I will keep you informed of progress.

Some of the unintended consequences of our initiative so far have included the establishment of better ties with other scientific organisations, such as the RACI, and institutions, such as the Faculty of Science at the University of Sydney. In relation to the latter, Robyn Stutchbury and I met with the Marketing Director of the Faculty to discuss how we might begin to share information on activities in order to make the Society more widely known at that university. An unintended consequence of that meeting was an invitation to attend an alumni breakfast at which the retiring Chief Scientist of Australia, Dr Jim Peacock spoke about science education.

I will be attending the 2nd Convention of the Royal Societies of Australia, to be held in Perth in early November. The RSA is an excellent vehicle for co-operation and sharing among the Royal Societies of Australia, so hopefully out of this meeting will come some positive proposals which will demonstrate in a tangible way how this might occur.

Lastly, it gives me great pleasure to announce that at its last meeting, the Council of the Society approved of the appointment of Prof Gerald Westheimer FRS as an Honorary Member of the Society in recognition of his life-time achievements in the field of ophthalmology.

John Hardie, President

Briefly… Membership

A big thank you to all members who have paid their 2008 membership. It's not too late to make a payment if you have received a recent reminder notice. Your membership and the many volunteer hours keep our Society alive.

Marian Haire, Hon Treasurer

Exploring the Milky Way: The Past, Present and Future

A Summary of the October lecture by Dr Naomi McClure-Griffiths

This fascinating talk to a large audience started with an illustrated two-minute history of the universe (which actually took two and a half minutes, but no one complained), outlined what we know about the structure of our galaxy (and how we know it), explored the ecology of the Milky Way (it's dominated by the complex recycling of interstellar gas) and finished with a description of the Square Kilometre Array radio telescope (which will revolutionise galactic studies).

The one thing Dr McClure-Griffiths didn't talk about is how galaxies form. That's because no one knows. Current cosmological models give detailed insight into the early universe, and into later star formation and galactic motions. For the time in-between, cosmologists just wave their hands and say 'galaxies are created at this time'.

However, observational astronomers like Dr McClure-Griffiths have made great progress in mapping our galaxy and in understanding its ecology. The key has been to use the radio emission of atomic hydrogen. Once every 12 million years or so, a hydrogen atom in interstellar space emits a photon at 1420.406 MHz via the spin-flip transition. There is little that absorbs this energy, so it can be detected by radio telescopes over vast distances. For galactic mapping, one assumes that changes in observed frequencies are due to Doppler shifts from orbital motions around the galaxy.

Councillor Jim Franklin, organiser of the October lecture, thanking Dr Naomi McClure-Griffiths following her very enjoyable presentation.

This enables the observed frequency shifts to be used to construct a 3D map of the galaxy. However, the pattern is ***very*** complicated and the resulting maps are hard to interpret and not very reliable. In 2004 Dr McClure-Griffiths took a different approach. She used a computer to create a model galaxy and then calculated what its radio emission would look like at Earth. The model was then adjusted until it gave the observed pattern. One robust feature of the model is a new outer galactic arm, now called the Vela arm. Once you know what to look for, you can (just) see it in the earlier maps. In 2006 she was awarded the Prime Minister's Malcolm McIntosh Prize for this work.

Dr McClure-Griffiths then explained that the interstellar gas forms the galaxy's atmosphere and drives its ecology i.e. the long-term cycles that include the birth and death of stars and determine the very structure of the Milky Way. The gas is recycled in complex ways, some of which are poorly understood. Extra gas is constantly being added to our galaxy from the intergalactic medium. This is formed into diffuse interstellar clouds, some of which become molecular clouds. The latter are the nursery beds for stars. Heavy stars explode, recycling most of the gas, although some is lost into extragalactic space.

Gas is also irretrievably lost to low mass stars, white dwarfs, neutron stars and black holes. The system depends on a net flow from the interstellar medium – without it star formation would stop. The current major source of gas for the Milky Way is the cannibalisation of the Magellanic Clouds. It is a matter of controversy as to whether these dwarf galaxies will be totally consumed (as Dr McClure-Griffiths' results suggest) or whether they will escape.

One of the great weaknesses of our current radio telescopes is that they are not sensitive enough to map the Milky Way's magnetic fields. This is a serious problem as the magnetic fields strongly influence gas motions and hence galactic ecology. Dr McClure-Griffiths' ended by describing the giant Square Kilometre Array that should answer this and many other questions. Galactic radio astronomy has a big future.

Jim Franklin, Councillor, Activities Co-ordinator

Report: Southern Highlands Branch of the Royal Society of NSW

Summary of Branch meeting held on Thursday 18th September 2008

Professor Phillip Hogg*, Director of the UNSW Cancer Research Centre, will be leading cancer research in the new Lowy Cancer Research Center being built at UNSW. Application of his basic research has led Philip to develop a novel class of cancer drugs and a new cancer treatment diagnostic by cell death imaging.

Philip Hogg has discovered a new type of functional disulphide bond, one that controls how proteins work by breaking or forming in a precise way. He has called these bonds 'allosteric disulphides'. This is a new paradigm in biology. The indications are that allosteric disulphides are an important way that protein function is regulated.

Philip has invented a class of cancer drugs that starves tumours of their blood supply. Cancer cells gain all the nutrients they need to grow from the body's bloodstream. As a tumour increases in size, it ensures that each of its cancer cells obtains sufficient nutrients by inducing the formation of new blood vessels in and around itself. In effect, it develops its own blood supply, enabling it to grow and spread to other parts of the body (forming metastases). This process of new blood vessel formation is called angiogenesis. If the development of new blood vessels in a tumour could be stopped, the tumour could effectively be starved of nutrients and stop growing. The drugs Philip has developed inactivate the cells that make the blood vessels in tumours. These drugs target the power supply, the mitochondria, of the cells of the blood vessel.

The main treatments for cancer are surgery, chemotherapy and/or radiotherapy. If the cancer has spread to other parts of the body then surgery is not an option and chemotherapy and/or radiotherapy is used. These treatments work by killing cancer cells. There are many chemotherapeutic drugs available today, and they are nearly always given in combination as a drug cocktail. Sometimes the drugs work well, most times they work okay and, unfortunately, many times they are ineffective. The drugs often also work well in the beginning but their effectiveness rapidly diminishes with continued treatment because the cancer itself changes with treatment. The drugs kill the sensitive cancer cells leaving resistant cells to multiply and establish a new tumour.

The first compound Philip developed inactivates mitochondria in blood vessel endothelial cells and arrests their proliferation. A clinical trial in adults with solid tumours sponsored by Cancer Research UK has been very encouraging. There have been no reported side-effects and somw patients appear to be responding to the drug. A new company, Cystemix Pty Ltd, has been formed by the University of New South Wales to manage the commercial development of this suite of drugs.

There is currently no non-invasive way to measure death of cancer cells by chemotherapy and/or radiotherapy. Philip has developed a small synthetic molecule that rapidly enters and concentrates in dead and dying cancer cells. He has shown that this compound, when tagged with a radioisotope, can be used to assess the efficacy of chemotherapy treatment in animal models of cancer. The technology was licensed to Covidien in October of 2007 for clinical development. Covidien is a world leader in medical imaging agents. We congratulate Phillip and his team and wish him all the success in the future.

Hubert Regtop, Vice Chair of the Southern Highlands Branch

**Professor Philip Hogg was the winner of the Biomedical Sciences Category of the in augural NSW Scientist of the Year 2008 Awards (ed).*

Membership Notices

The following new members were welcomed into the Society at its last General Monthly Meeting:

David John Howell (full)
Youn-Tai Hung (student)
Dhar Gitendra Pradhananga (student)

We note with deep regret the passing of Dr John Paul Wild.

Bruce Welch, Hon Secretary

Stop Press

The NSW Government has appointed its first *Chief Scientist and Scientific Engineer, Professor Mary O'Kane,* a former CSIRO board member and a one-time vice-chancellor of the University of Adelaide.

We look forward to working closely with her to support NSW as a centre for scientific research and innovation.

One Hundred Years Ago…

On Wednesday 7th October 1908 the Society met at 5 Elizabeth Street North with WM Hamlet, FIC, FCS in the Chair. Thirty-five members were present.

The Secretary, Mr JH Maiden announced that 'The Australian Association for the Advancement of Science…comes of age next year, and the meeting will inaugurate the Jubilee year of Queensland, whose history as a separate state dates from 1859. The new President is Professor W.H. Bragg of Adelaide, while the Sectional Presidents are Professor Pollock of Sydney (Astronomy, Mathematics and Physics); Professor Easterfield of Wellington N.Z. (Chemistry); Professor Skeats of Melbourne (Geology and Mineralogy)…'The AAAS at that time had a dozen sections.

The lecture for the evening was *On the Influence of Infantile Mortality on Birthrate* by GH Knibbs, FSS, FRAS, Commonwealth Statistician. The paper was read by Mr D Carment as the author was absent. The paper was quite mathematical. The lecturer started off with a discussion of the general observation that 'on the whole, with an increase of infantile mortality there is an increase in birth-rate.' He compared this with data from a dozen countries; Switzerland and Jamaica showed no effect on birthrate with infant mortality, Ireland, England, Wales and Scotland showed a decrease, Norway, Prussia, Japan, New Zealand and Australia showed an increase. Equations describing the relationships under various assumptions were derived which, the author suggested, should be regarded as an indication of the way that future work in this area could proceed.

Exhibits: An adding machine by Lawrence Hargrave. It was commented on that 'This implement was thought out in 1880... Four machines were made, the best of which was given to the late H.C. Russell; they were all unreliable and examples of the futility of the conceptions of the heart and contrivances of the brain when unsupported by ready and skilful hands. Experts will notice details of construction and design that are embodied in modern patents which might be rendered void on the ground of lack of novelty.' Mr. Maiden exhibited a ripe cone of *Pandanus forsteri* from Lord Howe Island.

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One Hundred Years Ago… from p3

Of particular note was an abstract of a lecture *On Carbon Dioxide and some of its properties* by Thos. Steel, FLS, delivered on 17 Sept. 1908.

Therein it states 'Further through its physical properties it exerts the controlling influence on climate, in acting as a blanket hindering the radiation of the earth of the heat received from the sun.' How amazed would Thos. Steel be that 100 years later most countries of the world would be signing the Kyoto Protocol with the objective of reducing greenhouse gases such as carbon dioxide.

Dr Michael Lake, October 2008

History of the Royal Society of NSW

Dr Peter Tyler has now taken up his Merewether Scholarship at Mitchell Library, to prepare a 'history of the Royal Society of New South Wales, its cultural significance and intellectual influence as the first scientific organisation in Australia'.

Peter will be working behind the scenes at the Library for the next twelve months, using the rich collection of manuscripts and personal papers of prominent citizens in colonial Australia, as well as the 48 boxes of Royal Society archives held by Mitchell Library.

An important element of Peter's research will be to shed more light on the apparent lapses in continuity between the original Philosophical Society of Australasia and its successors, which eventually became the present Royal Society of New South Wales.

While in London last month, Peter took the opportunity to visit the Royal Society and the British Library in search of relevant material. The archives of The Royal Society in London do not include many documents related to their colonial offshoots, although one interesting correspondence file contains a protracted dispute between former NSW Governor Sir Thomas Brisbane and NSW Government Astronomer Charles Rumker in the 1830s about the ownership of observational data that Rumker compiled at Brisbane's Parramatta observatory while he was an employee of Brisbane, using his instruments. Sir Thomas was an active member of the fledgling Philosophical Society during his time in Sydney, and after returning to Britain became a long-serving President of the Royal Society of London.

Peter Tyler, October 2008

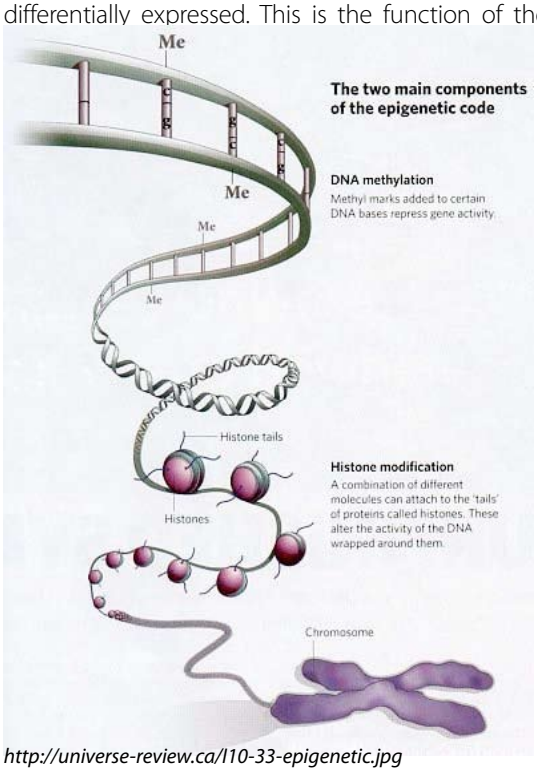
From Lamarck to the Agouti: The evolution of epigenetics

Eugenie Lumbers FAA is Emeritus Scientia Professor, UNSW • Tamas Zakar is an A/Professor, U of Newcastle

Instalment 2: *The epigenetic mechanism*

Instalment 1: ***In the beginning***…, appeared in Bulletin 319 and at the end of the article, the question was asked, ***How can this be?*** Read on to discover just how epigenetics works.

Our genes have to be switched on and off. All cells contain the same genetic complement, yet cells are strikingly different in structure and function: compare heart cells and nerve cells, for example. Clearly genes in different cells have to be differentially expressed. This is the function of the epigenome. We could consider that the genome is like a piano, waiting to be played. It is only the intervention of the composer through the pianist that generates music, so it is with the epigenome. It plays the genetic music specific to each cell that ultimately drives the production of proteins that control each cell.



http://universe-review.ca/I10-33-epigenetic.jpg

Genes have promoter regions where the first step in protein synthesis, the encoding of mRNA, begins. This is transcription. Transcription factors, often in large complexes, assemble on regions of the genome to initiate transcription. They have to access the gene promoter region in the DNA helix. At rest, the negatively charged DNA of a particular gene is tightly wrapped around histones, basic, positively-charged proteins, thus it is inaccessible to the transcription factors and RNA polymerase. To become transcriptionally active, DNA has to uncoil. This is achieved by making the histones less positively charged. Unwinding DNA and making it accessible to transcription is achieved by varying the state of methylation or acetylation of histones. Acetylation activates a gene complex and deacetylation represses its activation.

Another way in which a gene can be controlled is through the generation of an antisense molecule which also prevents transcription. Certain genes express RNAs that silence other genes.

Finally genes can be silenced by methylating cytosine (C) in islets of CpG (guanine) within DNA itself. Cytosine is one of the four nucleotides that make up the genetic code and it is always coupled to guanine. DNA is a double helix, so there are two strands linked by their complementary bases. Cytosine couples with guanine, adenine couples with thymine. There are regions in the genome where CpG couplets are rich. Methylation of CpG couples however attracts specific binding proteins that cover and sequester the methylated region hence the code-reading mechanism cannot access it and the gene becomes silent. CpG methylation therefore adds extra 'epigenetic' information to the nucleotide sequence code without actually changing it and the enzyme DNA methyltransferase (DNMT1) which methylates CpG, ensures that the epigenetic methylation pattern is inherited through cell divisions.

The processes of gene activation and silencing are important in development; in X-inactivation (see below), and in differentiation of cells into specific cell types.

Eutherian or placental mammals, such as we humans, have two sex chromosomes, X and Y. The female eutherian mammal has two X-chromosomes and the male has one X and one Y. The second female X-chromosome has to be silenced so that females are not exposed to a 'double-dose' of genes carried on the X-chromosomes. This is achieved by expression of an RNA (called Xist) which causes dense packaging of the

Continued p5

The evolution of epigenetics *from p4*

inactive X-chromosome. In early development either one of the X-chromosomes in a particular cell may be inactivated and this inactivation will persist through all the generations of cells that arise from the initial cell; hence the variegated colour coat of the tortoiseshell cat. This occurs because in different progenitor cells, different X-chromosomes are inactivated and this pattern of X-inactivation persists. Differential inactivation of the X-chromosome also means that female identical twins are not truly identical.

Jean-Baptiste de Monet de Lamarck
www.biografiasyvidas.com/biografia/l/lamarck.htm

In differentiation of stem cells into specific cell lines such as liver cells or bone cells, differential gene silencing and activation determines the path the stem cell will take. Our mature cells contain specific patterns of active and silenced genes. Thus it is extremely difficult to get them to differentiate into other cell types. This is why stem cell biologists depend on embryonic stem cells that are not methylated and therefore are pluripotent. During development, methyltransferases set the pattern of methylation. There are several interesting consequences: imprinting of genes and epigenetic determination of phenotype.

This raises the question: *Is there also epigenetic inheritance at the level of individuals?* The answer is in Instalment 3 (Bulletin 321): *The role of the maternal diet in epigenetics.*

A Pinched Copper Tube

It was a pleasure to see Science House, our former [and perhaps future] home, recently used for its original purpose, at least for a few hours. The audience was able to hear two related lectures in the large lecture theatre and view some of the other parts of the building, which won the first Sulman Prize for architecture. On Saturday September 6, as a part of the History Week program, the RSNSW presented two talks, the first a repeat of an important historical paper originally given at an RSNSW meeting in 1905 by Professor Pollock, presented by Jak Kelly, and the second a survey of some of the modern applications of this century-old piece of physics, given by Joe Khachan of Sydney University. He discussed the development of plasma based fusion experiments based on producing the high temperatures needed to cause atoms of hydrogen and its isotopes to fuse into helium with the liberation of excess energy. After decades of effort this goal is now in sight with the building of the ITER reactor in France which promises to be the first fusion reactor which produces more energy than it consumes.

The Science House theatre possibly before the 1950s

Early last century lightning struck the Hartley Vale kerosene refinery which was protected by a lightning conductor which contained a length of 18mm diameter, 1mm thick copper tube. The tube was crushed by the magnetic field produced by the massive current from the lightning stroke. This crushing force is now called the pinch effect and is central to most fusion reactor experiments where it squeezes a column of hydrogen gas together to increase its temperature and pressure. The Pollock and Barraclough paper in our journal is probably the first published analysis of this important effect. The original crushed tube has been preserved at Physics at the University of Sydney and Joe Khachan brought it to the meeting.

Jak Kelly, Past President

Oral History

Concurrently with the research for the history of the Society at Mitchell Library, we are anxious to commence an oral history project to record the impressions and opinions of some present and former members of the Royal Society of New South Wales. We need a small team of volunteer interviewers to assist with this project; equipment will be supplied as well as a training session in oral history techniques and practices. Please contact Robyn Stutchbury if you would like to help: rstutch@bigpond.net.au or 02 9427 6747.

Peter Tyler

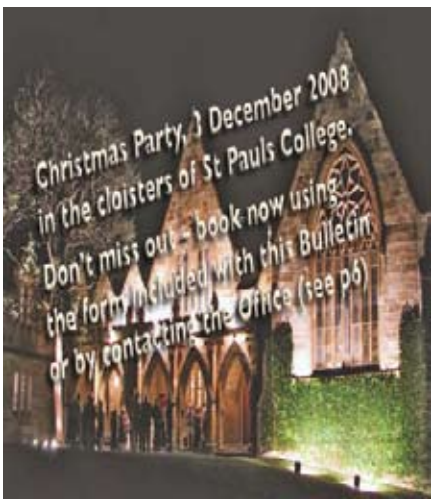
Liversidge Lecture

This lectureship is awarded at intervals of approximately two years for the purpose of encouraging research in Chemistry. It was established under the terms of a bequest to the Society by Professor Archibald Liversidge, MA, LLD, FRS, who was Professor of Chemistry in the University of Sydney from 1874 to 1907 and one of the Council that sponsored the Society's Act of Incorporation in 1881.

This year we are very privileged to have Professor Cameron Kepert from School of Chemistry, University of Sydney where he currently holds the position of ARC Federation Fellow to speak on *Molecular Materials: From Clean Energy Storage to Shrinking Crystals*

Professor Kepert completed a PhD at the Royal Institution of Great Britain (Ri GB), the same organisation that attracted the support of the Rann Government in South Australia.

And don't forget our Christmas Party! It follows the Liversidge Lecture



Science for Science House

Suddenly the year is almost over and Science House remains empty as it has been for over 12 months. Our small taskforce, John Hardie and Robyn Stutchbury, President and Councillor of our Society; Emeritus Scientia Professor Eugenie Lumbers, FAA, and David Ellyard, Treasurer, Australian Science Communicators, have been beavering away relentlessly. We have made remarkable progress but there is still a long way to go. There is but one vision, Science House for all science as the NSW Science Centre.

Since February, when we submitted a letter of interest to the owners of Science House, the Sydney Harbour Foreshore Authority (SHFA), we have rallied the support (in principle) of many distinguished scientists and other interested people, including John Bilmon, Principal Director, PTW (formerly Peddle Thorpe and Walker, the winning architects of the Sulman Medal for Science House, 1932). This firm of architects designed, among other beautiful buildings, the 'Water Cube' for the Beijing Olympics. They are dedicated to architectural heritage, especially having a heritage listed building returned to its original use. Of the distinguished scientists we have Professor John Shine (Garvan Institute), Robyn Williams (ABC Science) and many Fellows of the Academy of Science and many many others.

Our taskforce has now met with representatives of the Office of Science and Medical Research (OSMR) on a number of occasions since April. There was a meeting with the then Minister for Science, Verity Firth who was very enthusiastic about our initiative and offered to fund the preparation of a business plan so that we could get on with bringing together the teams of scientists and their organisations that will benefit from setting up their centres in Science House: universities, the CSIRO, research organisations, communication and media groups, government agencies, industry and venture capitalists, and of course, science education representatives.

We have met with SHFA representatives and they too, are very supportive. **We have one huge hurdle: Finding $800,000 per year rent and funding for refurbishing the building.**

This is all part of our business plan, the preparation of which is well under way awaiting the input of a highly regarded consultant who is a specialist in the field. However, the funding has not been forthcoming: Minister Firth is now Minister for Education and there is to be a mini-budget announced on 11 November. It is rumoured that this may have an impact on our endeavours. We are back at the drawing board working out strategies that will clinch the deal.

Mr Peter Yates was catalyst for the the establishment of the Royal Institution (Aust) and the setting up of the Australian Science Media Centre in South Australia. He negotiated with Premier Rann to have both of these housed rent-free in the fully refurbished Old Stock Exchange building in Adelaide's CBD, all at the Rann Government's expense. **Let's see if Sydney can have its own Science Centre funded primarily by government in line with the South Australian initiative.** We can but try.

If you are interested in learning more of this initiative, please contact Robyn Stutchbury. We are in the process of having small promotional cards printed and a prospectus prepared, both for distribution to those who might benefit from being involved in Science House.

Robyn Stutchbury, Science for Science House Project Co-ordinator
email: rstutch@bigpond.net.au, phone: 02 9427 6747.

Darwin Celebrations 2009

For our event celebrating the publication of Darwin's *Origin of the Species* we hope to stage an event involving a debate between Darwin and Wallace using professional actors and producers. We hope to return the focus of our audience to 1859 and use techniques to transport us back in time. If you have some inspirational ideas and know people who might enjoy being involved, please contact Robyn Stutchbury through the Society's office.

Double Helix Science Club

This club is not only for the younger set. Teachers and parents will also find it interesting.

Membership includes *Science by Email,* a free online newsletter for members of CSIRO's Double Helix . To subscribe, go to http://www.csiro.au/helix/sciencemail/subscribe.html

Keep up with strange and amazing science news from Australia and around the world.

NSW Scientist of the Year Awards

Professor Martin Green is the NSW Scientist of the Year 2008. Professor Green is a world leading solar energy expert and the Executive Research Director at the Australian Research Council (ARC) Centre of Excellence for Photovoltaics at the University of NSW.

The NSW Scientist of the Year Awards recognise and reward the state's leading researchers for cutting edge work that generates economic, health, environmental or technological benefits for NSW. For more information go to: *http://www.osmr.nsw.gov.au/science_communication/science_promotion/scientist_of_the_year*

Contact your office bearers

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