



# NSW DIVISION NEWSLETTER

September  
2005

## NEXT MEETING

NSW DIVISION of the GEOLOGICAL SOCIETY OF AUSTRALIA

**Wednesday, 21 September 2005, 6.00 pm**

**Dr John Bradshaw**

**Burying the problem:  
Will geosequestration solve  
the challenge of  
increasing CO<sub>2</sub> emissions?**

### VENUE

Biomedical Theatre D,  
Biological Sciences Building, UNSW.

Executive committee meeting 4.30 pm  
Pre-talk drinks from 5.15 pm  
Talk starts at 6:00 pm  
(Page 2 for details)

#### Address

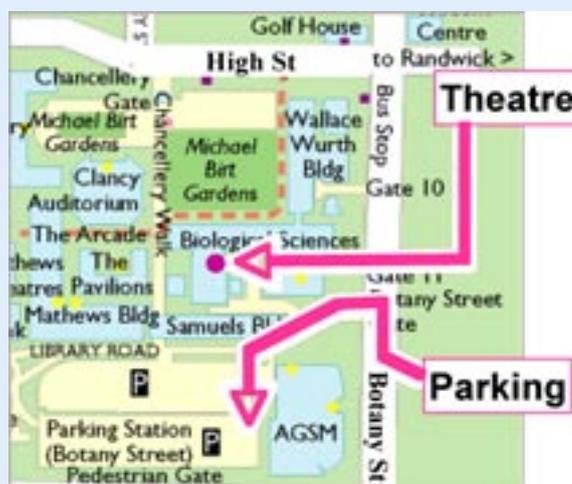
School of BEES  
Biological Sciences Bldg  
University of NSW  
Sydney NSW 2052

#### Parking

Enter Gate 11  
Botany Street

#### Inside this issue...

Minutes of meetings  
Next meeting  
Important announcements  
Membership  
NSW divisional contacts



**Parking at UNSW: "Pay-and-Display parking" is available on the upper two levels of the Parking Station (Botany Street). Security patrol till 7.30pm and may issue police infringement notices if you are found parking in the wrong place (e.g the Vice Chancellor's car space).**

## **Minutes of the meeting, Wednesday 17th of August, 2005.**

---

The meeting started at 6:00pm, with 16 members and visitors present.

Apologies: Joel Fitzherbert, Ron Vernon, David Branagan, Dietmar Muller, Adriana Dutkiewicz

A general welcome was given by Tom Hubble, GSA NSW Division Chairperson.

Brad Opdykes talk summarised a decade of work on Paleoceanographic samples from both the North-west and North-east of Australia. Brad discussed how changing atmospheric and ocean circulation has dramatically altered the climate of western Australian. How it has evolved from hyper-arid to semi-arid during the Termination of the last Glacial age. He also presented evidence of a severely arid event that took place during the Younger Dryas with the Australian portion of the Indo-Pacific warm pool. Data show temperature didn't respond to the YD of the Northern Hemisphere, but the ocean surface salinity certainly did. On the east coast we can track temperature and current changes and assess their impact on the Great Barrier Reef. Finally Brad spoke about how carbon cycling in the oceans was affected by the reorganisation of global ocean currents on a glacial to interglacial time scale. After the talk 4 members went to dinner at the Wok Station on Glebe Point Rd.

Hon. Secretary  
Felicia Weir

---

## **September 2005 meeting: Dr John Bradshaw (Geoscience Australia)**

---

### **Geological storage of CO<sub>2</sub>; A solution for emission reductions, or too little, too late?**

#### **Abstract**

There has been a marked shift amongst scientists in the international arena over the last decade as to the likelihood that anthropogenic emissions of CO<sub>2</sub> are affecting the world's climate. Irrespective of the climate debate, many scientists also believe that within our lifetime the oceanic uptake of CO<sub>2</sub> from the CO<sub>2</sub> enriched atmosphere, with the subsequent reduction of the pH of the oceans, may mean that the ecosystems of the world's oceans will be seriously affected. As a result, governments around the world are looking for solutions for deep reduction of CO<sub>2</sub> emissions from anthropogenic sources. One of the principal sources of CO<sub>2</sub> are coal fired power stations, which in Australia account for approximately 50% of our total emissions. The planned growth in regions like China and India over the next fifty years will mean that 50% of all new coal fired power plants will be built in these areas. Given that such plants have a 30 to 40 year working life, this means that unless clean coal technology can be developed and deployed rapidly to the developing world, then meeting future emissions reductions at a worldwide scale will be extremely challenging. Numerous other options such as renewables, less carbon intensive fuels and fuel efficiency must be pursued. No single option is going to be able to provide either the global solution or provide a solution in all situations and locations, and each option comes with its own particular issues.

Various emerging technologies either exist or are being developed for coal fired power stations, which means that emissions from these sources could potentially be viably captured and concentrated. Technologies such as generation of energy through Integrated Gasification Combined Cycle (IGCC) power plants and proposed coal to liquids operations, might be a long term goal, especially if they simultaneously produce pure CO<sub>2</sub> that can be captured more economically, reduce overall emissions of pollutants, and provide a lead into a hydrogen economy.

If low emission technologies that capture CO<sub>2</sub> at the source are to succeed, and so provide a more sustainable energy industry, then places for storing very large volumes of CO<sub>2</sub> will need to be defined, tested and proven. When the volume of CO<sub>2</sub> emissions world wide is examined and compared to the

## September 2005 meeting: Dr John Bradshaw (Geoscience Australia)

---

natural gas industry rates of production, geological storage of CO<sub>2</sub> will have to be up to an order of magnitude bigger. For geological storage to be successful, and if industry is to successfully operate in a carbon constrained world, then geoscientists will have to play a vital role in the exploration, development, operational and monitoring phases of geological storage. Can such a challenge be met, or will the changes and technology development that needs to happen be too little, too late?

**Dr John Bradshaw** has a BSc (Honours) and PhD from the University of New South Wales. He has worked as a consultant, in industry and government over the last 24 years. He has managed several large industry sponsored research programmes examining the petroleum potential of Australia and PNG, and has published over 100 papers and reports. Since 1999 he has dedicated all of his time to CO<sub>2</sub> Storage of CO<sub>2</sub>, working with the GEODISC project and the Cooperative Research Centre for Greenhouse Gas Technologies (CO2CRC). He is currently Group Leader of the Petroleum and Greenhouse Gas Advice Group at Geoscience Australia, is a Lead Author on the Special Report by the Intergovernmental Panel on Climate Change on Carbon Capture and Storage, and is part of the Australian technical delegation on the international Carbon Sequestration Leadership Forum. He is a member of PESA, AAPG, DEG and GSA.

---

## Important announcements for September 2005

---

### 2005 Annual General Meeting

The Geological Society of Australia is holding its 2005 Annual General Meeting at 5:00pm on the 28th September 2005. The 2004 financial accounts and auditor's report will be presented by the Treasurer. The Secretary will present minutes of the 2004 AGM and copies of both, plus the 2005 agenda, are available to members from sue@gsa.org.au by email or hard copy.

Location: Main Geology Lecture Theatre (Room 211), School of Earth Sciences  
University of Tasmania Earl Street Entrance, Sandy Bay

### GSA Activity Alerts

An email alert is now being sent once a month to the Australian Science Communicators to keep the wider science community aware of our Divisional and SIG meetings as well as other GSA activities around the country. It certainly will raise our profile amongst this group of widely-connected communicators and shows how much activity really does go on at the GSA. This month's went out in the first week of August and all alerts from now on will go out at the start of each month. Contact publicity@gsa.org.au to lodge your event or meeting.

### TAG

We are always keen to promote 'in the field' events in the pages of TAG. If you've held a field trip, course or workshop, let's hear about it! Email material to tag@gsa.org.au along with any pictures - black and white, high resolution.

### Earth Science Week 9-15 October 2005

There will be much activity around the country. If you have an event underway, please advise Jess Tyler, GSA Publicity and Media so that all our events can be lodged with the national Earth Science Week calendar. Call 0408 298 292 or email publicity@gsa.org.au

### International Association of Hydrogeologists meeting

There is a joint NZ Hydrological Society - International Association of Hydrogeologists (Aust. Chapter) - NZ Soil Science Society meeting in Auckland Nov 27 - Dec 2 2005. for further information checkout: <http://www.hydrologynz.org.nz/ak1cir.html> or <http://www.iah.asn.au/>

---

## GSA (NSW) Meetings:

---

### October:

The NSW Division's Public Lectures for 2005. In Conjunction with the Australian Museum Society, Australian Museum, College Street Sydney. Please note that there will be an admission charge of \$12 and **BOOKINGS ARE ESSENTIAL**. For bookings call (02) 9320-6225 or email [tams@ausmus.gov.au](mailto:tams@ausmus.gov.au). Up market refreshments will be provided. These meetings will commence at 6:30 for a 7:00pm start. Lectures will be held at the Australian Museum Theatre.

### Wednesday

#### October 5th:

I) Extinction of Australia's Megafauna  
Dr Steve Wroe - The University of Sydney

II) Conceptions of Climate Change - Time Scales and Popular Perception - Dr Tom Hubble - The University of Sydney

### Wednesday

#### October 12th:

I) Development of the Sydney Basin  
Dr Ian Graham - Australian Museum

II) Structural and Engineering Geology of Sydney  
David Och - Douglas Partners

III) Sydney's Heritage Sandstone  
Dr Brenda Franklin - Consultant Petrologist

### November

#### Friday 18th:

Farewell to the Edgeworth David Building Honours Night  
Dr David Branagan

---

## Membership matters

---

### Applications for membership:

Simon Richards	- application for full membership
Glen Morgan	- application to transfer to the ACT
Scott Thompson	- application for full membership
John Watkins	- application to become a Fellow of the GSA

### New Members:

Col Eglinton - Student member  
Darren Higgins - Student member

---

## Contact details

---

Chairman:	Dr Tom Hubble	( <a href="mailto:tom@geosci.usyd.edu.au">tom@geosci.usyd.edu.au</a> )
Past chairman:	Dr Paul Lennox	( <a href="mailto:p.lennox@unsw.edu.au">p.lennox@unsw.edu.au</a> )
Hon. Secretary:	Miss Felicia Weir	( <a href="mailto:fweir@geosci.usyd.edu.au">fweir@geosci.usyd.edu.au</a> )
Hon. Treasurer:	Dr Derek Wyman	( <a href="mailto:dwyman@geosci.usyd.edu.au">dwyman@geosci.usyd.edu.au</a> )
Newsletter:	Dr Joel Fitzherbert	( <a href="mailto:joel@geosci.usyd.edu.au">joel@geosci.usyd.edu.au</a> )
Committee members:	Dr Dioni I. Cendon	( <a href="mailto:dcendon@uow.edu.au">dcendon@uow.edu.au</a> )
	Dr Ian Graham	( <a href="mailto:iang@ausmus.gov.au">iang@ausmus.gov.au</a> )

---

### NEWSLETTERS

You can help your society by subscribing to the NSW Divisional GSA Newsletter on-line at [gsa@geosci.usyd.edu.au](mailto:gsa@geosci.usyd.edu.au).

This saves us funds and allows more rapid receipt of society information

---

E-mail [gsa@geosci.usyd.edu.au](mailto:gsa@geosci.usyd.edu.au) Web site: <http://nsw.gsa.org.au>

---

# *Bowen Basin Symposium Corporate Golf Tournament*

**Saturday 15<sup>th</sup> October, 2005**

**Rydges Capricorn Resort, Yeppoon**



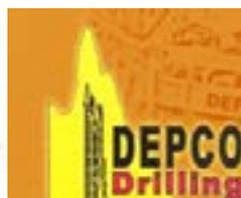
Please indicate your interest in participating in the golf tournament on your registration form or by contacting Chris on 07-38316122 or [charwood@geoconsult.com.au](mailto:charwood@geoconsult.com.au)

**There are a limited number of players that are able to participate in this event, so please indicate your interest in participating ASAP - first in, best dressed.  
Open to Bowen Basin Symposium Delegates and Associates.**

Tee off (two tee start) for the tournament will be from 7.30am in groups of four. This event will be a **fully sponsored tournament**, which includes a full round of 18 holes motorized buggies and a sausage sizzle at the completion of the event. Prizes will also be awarded over lunch for a variety of achievements throughout the morning.

Please note that whilst club hire is available from the resort (for a small fee), a very limited number of sets will be available, so if possible, please provide your own clubs.

## **Special thanks to tournament sponsors:**





The *Geological Society of Australia Victorian Branch* presents:

## SELWYN SYMPOSIUM 2005

# Cashing in on the Mineral Boom

**Thursday 29<sup>th</sup> September 2005**  
**The University of Melbourne**

AT the Charles Pearson Theatre, registration opens at 8.50 am for a 9.15 am start.  
*The minerals industry is currently undergoing a boom period with lots of activity. This year's Symposium presents talks on current mineral exploration in Victoria.*

**Keynote speakers:** \*Clive Willman (DPI) & \*Dr Neil Phillips (University of Melbourne)

**Industry talks:** \*Bendigo Mining \*Sedimentary Holdings  
\*Leviathan Resources \*Goldstar Resources \*Oroya Mining  
\*Perseverance \*AGD Mining \*Reedy Lagoon Corporation  
Ltd \*Alexander Resources \*Ballarat Goldfields

**Industry Forum:** \*Predictive Mineral Discovery CRC  
Research, \*the Department of Primary Industry & \*the  
Minerals Council of Australia

**Cost:** \$80 for the symposium.  
(\$30 for retirees, free for full-time students).

**Selwyn Lecture:**  
*Tomorrow's exploration challenges for today's  
Megaminers.*

6.15 –7.00pm presented by: **Dr Tom Whiting** (BHP  
Billiton). **Note:** this is a public lecture held in the Fritz Loewe  
Theatre, Earth Sciences McCoy Bdg -admission is free



**Symposium venue location**

**Enquiries:** Dr Stephen Gallagher email: [sjgall@unimelb.edu.au](mailto:sjgall@unimelb.edu.au) Ph: 8344 6513 (BH)

*The Selwyn Symposium of the Geological Society of Australia (Victoria Division)*  
*c/- Dr Stephen Gallagher*  
*School of Earth Sciences, The University of Melbourne, Victoria 3010.*

### **BOOKING FORM**

I/we wish to attend the Selwyn Symposium on Thursday 29 September 2005 and enclose a cheque for \$.....  
payable to The Geological Society of Australia (Victoria Division). (\$80 per person; \$30 for retirees, free for full-  
time students)

Names and affiliations: .....

.....

.....



Australian Government  
Geoscience Australia

# Earth science week

2005

october 9-15

[www.ga.gov.au/about/event/index.jsp](http://www.ga.gov.au/about/event/index.jsp)