



# Geo-soundings

NEWSLETTER – JUNE 2005

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## WELCOME

Welcome to the second quarterly newsletter of Geosoundings for 2005. This has been a very productive quarter, resulting in **7 journal publications** and **15 conference presentations** being delivered at 5 conferences. The other good news as detailed below, is that the Department has been successful in obtaining another COE, which is to be jointly funded from the WA State Government and industry partners. We also welcome two new staff members, **Dr Mark Lwin** and **Mrs Dina Makarynska** to the Department. (See brief profiles.)

## CENTRE OF EXCELLENCE

Our application for a **Centre of Excellence (COE) in High Definition Geophysics** has been conditionally approved by the State Government. The COE is planned to officially start on **1 Jan 2006** and will receive \$2.3M in cash support over 4 years from the State Government, \$1M from Curtin University and pledges from industry that will total more than \$10M over 5 years to support the COE research projects. Industry partners currently pledging support for the COE include: ISA Technologies, Goldfields, Placer Dome, Sydney Gas, Griffin Coal, Jubilee Mines, WMC, IGO, and Anglo-Gold.

The principal focus of research in the COE will be in the introduction of seismic methods into new environments and further developments in the application of geophysical methods that are capable of high resolving power. This COE will be a very significant addition to the Department in both research activity (to more than double) and in staffing profiles as it is expected that there will be at least six new staff members added.

## JOURNAL PUBLICATIONS

Ciz, R. and **Gurevich, B.**, 2005, *Amplitude of Biot's slow wave scattered by a spherical inclusion in a fluid-saturated poroelastic medium*; Geophysics, 160, p991-1005

**Hashemi, A., Meyers, J.**, and Rothery, E., 2005, *Sub-audio surveying for shallow occurrences of conductive manganese ore, Woodie Woodie area, Western Australia*; Exploration Geophysics, 36, No 2, p 170-175

Cooper, M., **Meyers, J.**, Ryan, D., and Compston, D., 2005, *High-resolution mapping using SAM surveys over Bogada Bore gold prospect, Western Australia*; Exploration Geophysics, Vol 36, No 2, p140-146

**Muller, T.**, and **Gurevich, B.**, 2005, *Wave-induced fluid flow in random porous media: Attenuation and dispersion of elastic waves*; J. Acoust. Soc. Am., 117, p2732-2741

**Rosid, M.**, and **Kepic, A.**, 2005, *Hydrogeological mapping using the seismoelectric method*; Exploration Geophysics, Vol 36, No 2, p 245-249

**Sherlock, D.**, **Scoby-Smith, L.**, and **Montague, E.**, 2005, *Time-lapse analogue reservoir modelling of turbidite channel sands*; Exploration Geophysics, Vol 36, No 2, p 216-223

**Whitford, M.**, **Meyers, J.**, and Stoltz, N., 2005, *The SAM EQMMR response of the regolith at East Victory, St Ives Gold Mine, Western Australia*; Exploration Geophysics, Vol 36, No 2, p133-139

## CONFERENCES PRESENTATIONS

### 3RD BIOT CONFERENCE ON POROMECHANICS, 24-27 MAY, NORMAN, OKLAHOMA, USA

**Lambert, G.**, **Gurevich, B.**, and **Brajanovski, M.**, 2005, *Frequency dependent anisotropy of porous rocks with aligned fractures*

**Muller, T.**, and **Gurevich, B.**, 2005, *Attenuation and dispersion of compressional elastic waves due to wave-induced flow in random porous media*

Ciz, R., **Sherlock, D.**, Howman, S., and **Gurevich, B.**, 2005, *Reflection at an interface between a free fluid and porous material: theory versus experiment*

Ciz, R., **Toms, J.**, and **Gurevich, B.**, 2005, *Attenuation and dispersion of elastic waves in a poroelastic medium with spherical inclusions*

### 67TH EUROPEAN CONFERENCE & EXHIBITION, 13-16 JUNE, MADRID, SPAIN

**Gurevich, B.**, **Lambert, G.**, and **Brajanovski, M.**, 2005, *Seismic attenuation due to fluid flow between pores and fractures*

**Lambert, G.**, **Gurevich, B.**, and **Brajanovski, M.**, 2005, *Frequency dependent anisotropy of fractured porous rocks*

**Muller, T., Toms, J., Ciz, R., and Gurevich, B., 2005, Seismic attenuation due to wave induced fluid flow in heterogeneous reservoirs**

**Muller, T., and Gurevich, B., 2005, Seismic signatures of permeability fluctuations in porous rocks**

**Slater, J., and Urosevic, M., 2005, Appraisal of fault connectivity and reactivation potential, Laminaria High, North West Shelf**

**Toms, J., Ciz, R., and Gurevich, B., 2005, Seismic attenuation due to regular and random distribution of fluid patches in porous rocks**

**Toms, J., Muller, T.M., and Gurevich, B., 2005, Seismic attenuation due to wave induced fluid flow in heterogeneous reservoirs**

**Urosevic, M., Stoltz, N., and Massey, S., 2005, Seismic Exploration for Gold in Hard Rock Environment - Yilgarn Craton, Western Australia**

#### **WASTEENG 2005 INTERNATIONAL CONFERENCE, 15-17 MAY, FRANCE**

**Li, Q., Harris, B., Aydogan, C., Ang, M., and Tade, M., 2005, Feasibility of recharging reclaimed wastewater to the coastal aquifers of Perth, Western Australia**

#### **1ST INTERNATIONAL CONFERENCE ON ENVIRONMENTALLY SUSTAINABLE DEVELOPMENT, 26-28 JUNE, ABBOTTABAD, PAKISTAN**

**Street, G., Abbott, S., and Beckett, K., 2005, Geophysical aids for detailed soil maps**

#### **MINERAL EXPLORATION THROUGH COVER CONFERENCE, 24 JUNE, ADELAIDE**

**Meyers, J., 2005, State of the art in ground airborne electromagnetic prospecting for mineral deposits**

### **PRIZES/AWARDS**

We would like to announce the winners of the business card draw, held at our Booth at the **EAGE Conference** in Spain. The winners are:

**Joe Moser, ConocoPhillips, Dubai**

**Wolfram Gödde, DMT, Germany**

**Osman Khan, Veritas, Singapore**

Thank you to all of those who participated.

#### **WINNERS OF THE AusIMM - 2005 AWARDS FOR ACADEMIC EXCELLENCE:**

These awards have been offered to the following students who attained the highest scores for their studies in 2004.

**Best First Year Student: Matthew Little**

**Best Second Year Student: Owen Davis**

**Best Third Year Student: Jacob Paggi**

**Best Fourth Year Student: Michael Whitford**

#### **K A RICHARDS MEMORIAL SCHOLARSHIP - 2005:**

Awarded to PhD Student – **Robert Galvin**

#### **ASEG RESEARCH FOUNDATION GRANT - 2005:**

Awarded to PhD Student – **Gracjan Lambert**

### **NEW EQUIPMENT**

The Department has recently purchased a new Distributed Box Seismic System from Seistronix. The system is capable of recording 120 channels with up to 6 separate lines. Already work has been planned for the new system in Queensland at the end of July performing both conventional seismic and seismoelectric surveys.

### **EXPOS/SCHOOL VISITS**

#### **Careers & Education Expo 2005 – Perth Convention Centre**

The Department of Exploration Geophysics participated in the organising of an ASEG booth for the Careers and Education Expo at the Perth Convention Centre, which was held 13-15 May. We would like to thank ASEG members, Greg Street, Megan Evans, Chris Walton, Paul Mutton and Susannah Elvey who gave participants an industry perspective as well as Dominic Howman, Paul Wilkes, Owen Davis, Paul Wellington, Nicole Judge, Anton Kepic, John Lingard Jenny Powell, Jacob Smith and Russell Eade who so freely gave their time so that the booth could be a success.

#### **Australian Student Mineral Venture (ASMV)**

The Department of Exploration Geophysics has again participated in this annual promotional event, which is sponsored by the AusIMM throughout Australia. 45 specially chosen high school students arrived at our premises in the ARRC Building on the 5<sup>th</sup> July and were hosted by Anton Kepic and Dominic Howman, who showed them various aspects of the geophysics industry. Interactive activities included field exercises demonstrating the gravity, magnetic and seismic methods. Fortunately the weather once again held off to make this a successful event.

### **STAFF NEWS**

We welcome two new academic staff appointments to the Department. They are:

**Dr Mark Lwin** has commenced a 3 year appointment as a Post Doctoral Fellow, which is being funded by the CO<sub>2</sub>CRC. Mark will be working closely with Brian Evans and will be responsible for developing and operating a PVT chamber, which is being used to sense changes in seismic wave propagation during CO<sub>2</sub> injection. Mark has a BSc, MSc and PhD, all from Queensland Institute of Technology.

**Mrs Dina Makarynska** has been appointed for the duration of 2005 as a Research Associate and will be assisting Professor Boris Gurevich with his ARC Discovery Grant Project. Dina's duties include numerical computation of elastic properties of fractured media. Dina has a Diploma of Engineer-Oceanographer from Odessa, Ukraine.



On a lighter note, we offer our congratulations to the newly married couple Luke and Shelly Brown. Luke is a PhD student with the Department and we wish them all the best for a long and happy future together.

