

# Geo-soundings

NEWSLETTER - DECEMBER 2002

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## CONFERENCES

Six staff members and one student attended the 72<sup>nd</sup> SEG International Exposition which was held this year in Salt Lake City, Utah from 6-11 October. The following papers were presented:

**Butler, K.E., Kopic, A.W., and Rosid, M.S.,** *An experimental seismoelectric survey for groundwater exploration in the Australian Outback: 72nd Ann. Internat. Mtg., Soc. Explor. Geophys., Expanded Abstracts, Vol II, 1484-1487.*

**Gerhardt, A., Machado, M. and Gattass, M.,** *Enhanced visualization of 3-D seismic data: 72nd Ann. Internat. Mtg., Soc. Explor. Geophys., Expanded Abstracts, Vol I, 625-628.*

**Gurevich, B.,** *Elastic properties of saturated porous rocks with aligned fractures: 72nd Ann. Internat. Mtg., Soc. Explor. Geophys., Expanded Abstracts, Vol II, 2405-2408.*

**Gurevich, B.,** *Elastic wave attenuation in porous rocks: effects of pre fluid viscosity and frequency: 72nd Ann. Internat. Mtg., Soc. Explor. Geophys., Expanded Abstracts, Vol II, 1821-1824.*

**Luo, M., and Evans, B.J.,** *Imaging fractures and faults from 3-D VSP(s): 72nd Ann. Internat. Mtg., Soc. Explor. Geophys., Expanded Abstracts, Vol II, 2389-2392.*

**Urosevic, M., and Dodds, K. J.,** *A simple approach to assessment of seismic expression of abnormal geo-pressure: 72nd Ann. Internat. Mtg., Soc. Explor. Geophys., Expanded Abstracts, Vol I, 450-453.*

**Zhang, F., and Uren, N.,** *P-wave ray velocity functions, semblance analysis and NMO corrections in transversely isotropic media: 72nd Ann. Internat. Mtg., Soc. Explor. Geophys., Expanded Abstracts, Vol I, 133-136.*

## JOURNAL PUBLICATIONS

**Gurevich, B., and Landa, E.,** Multifocusing imaging with controlled reflection-point dispersal: *Geophysics*, **67**, 1586-1592.

## STAFF NEWS

We would like to congratulate **Brian Evans** who was appointed to a personal Professorial Chair as announced by the Vice Chancellor in his note to staff on 1<sup>st</sup> November. Well done Brian.

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Winners of the PESA Golf Tournament were "The Final Curtin" ARRC golf group consisting of Jason McKenna, Troy Thompson, Don Sherlock and Megan Evans



*The Final Curtin*

## PRIZES & AWARDS

**Mrs. Ruiping Li** has been awarded the Mary Walters Bursary valued at \$2,750. This award has been made on behalf of the Australian Federation of University Women (WA) Incorporated, Education Trust. The announcement of the successful winners took place in the second week of October 2002. The Bursary Committee reported that the quality of this year's applications were outstanding. Mrs. Li will be requested to give a presentation on her research topic in 2003 to the members, with the possibility of publishing this presentation at a later date.

Our congratulations are extended to **Dr. Chris Manuel** on achieving his PhD. Christopher's thesis was officially passed by the Chair of the University Graduate Studies Committee on the 19th November 2002.

## STUDENTS

The following students presented talks at the ASEG, WA Branch Meeting held over two nights

### NIGHT 1 - 16th October

**Mr. Adam KROLL** - *Comparative study of different AEM systems using real and synthetic data for massive and disseminated Ni-Cu-PGE in Western Australia.*

**Mr. Ryan METCALFE** - *A Comparison of ocean bottom with surface seismic data using calcified physical models.*

**Mr. Reece FOSTER** - *The effectiveness of spectral analysis of surface waves for mapping regolith.*

**Mr. Justin VERMEULEN** - *Multiple attenuation using periodicity and velocity discrimination based techniques.*

**Ms. Anousha HASHEMI** - *Inversion of TDHEM data for exploration of manganese ore, East Pilbara Western Australia.*

**Mr. Barrett CAMERON** - *Rapid acquisition of audio-frequency magnetotellurics.*

### NIGHT 2 - 23rd October

**Ms. Gemma KING** - *A comparison of three-dimensional gravity inversion techniques over the Laverton region of Western Australia.*

**Mr. Christopher HUDSON** - *Development of a capability to perform analogue seismic modelling of complex structures.*

**Mr. Jared TOWNSEND** - *Comparison of TEM sensors for detection of conductive targets beneath a conductive overburden.*

**Mr. Luke BROWN** - *Numerical analysis of fractured porous rock models.*

**Ms. Karen GILGALLON** - *Geophysical investigations of paleochannels in the Lake Bryde catchment, Western Australia.*

**Mr. Benn HANSEN** - *Evaluating the impact of fracture-induced anisotropy on reservoir rock property estimates made from seismic data.*

### PRIZE WINNERS

Winners for the best presentations were **Benn Hansen** and **Reece Foster**. Prizes will be awarded at the Annual General Meeting of the Society on 20 December 2002

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**Tim Dean** from the Australian Defence Force Academy (a former student of the Department of Exploration Geophysics) was awarded first prize for his poster presentation *Monitoring agricultural insect pests...using a low cost mobile X-band profiling radar* presented at the recent 15<sup>th</sup> Biennial Congress of the AIP.

## GRADUATION DINNER

The annual Graduation Dinner was held again at the Kirribilli Café on Friday 22 November. 56 students and staff attended including Norm Uren and his wife GiGi. As retiring Head of Department Norm, along with John McDonald, gave an encouraging speech to graduating students wishing them well in their future careers.

### Student Numbers

After a discouraging 2002 when our first year enrolments were very low, things are looking a lot better for 2003. To date 17 first preferences have been recorded.

## VISITORS

We welcome **Dr. Tobias Müller** to the Department. Tobias commenced his appointment as a visiting fellow on 3 October 2002. His appointment to Curtin is for two years and is part of a prestigious fellowship from the German Science Foundation (DFG). In 2001 Tobias received his PhD from Free University of Berlin for his studies on "Seismic pulse propagation in statistically inhomogeneous geological structures".

**Professor Max Peeters** returned to Colorado School of Mines after a four month visiting appointment with the Department. Some staff members were treated to lunch at the Kirribilli Café by Max prior to his departure.



John McDonald, Deirdre Hollingsworth, Norm Uren,  
Robert Verstandig, Max Peeters, Rhonda Green

## OTHER NEWS

**Bruce Hartley** will be travelling to France in January to conduct experiments at the Laboratoire Ondes et Acoustique at Paris Université VII, in collaboration with Professor Mathias Fink. The experiments are aimed at a laboratory in-principle test for the system of continuous seismic monitoring which was devised in the Department of Exploration Geophysics and is subject to a patent application to the United States Patent Office. Bruce will also meet with scientists at CGG to see whether the new system of continuous seismic can be use the source technology of CGG used in their SeisMovie system of using sinusoidal signals to measure changes in the sub-surface.

*Merry Christmas and a Happy New Year  
to all our readers*