

# Geo-soundings

NEWSLETTER - MARCH 2001

Editor: Mrs Rhonda Green  
Curtin University of Technology  
GPO Box U1987, Perth WA 6845

Prof Norm Uren, Head  
Department of Exploration Geophysics

Enquiries: Tel (08) 9266 3408/3565  
Fax (08) 9266 3407

Email enq@geophy.curtin.edu.au  
www.geophysics.curtin.edu.au

## ENROLMENTS 2001

### TOTAL ENROLMENTS FOR 2001 ARE:

|                                           |    |
|-------------------------------------------|----|
| BSc (Geophysics) Undergraduates & Honours | 97 |
| Grad Diploma                              | 0  |
| Postgraduate Diploma                      | 0  |
| MSc (Geophysics) - Coursework             | 1  |
| MSc (Geophysics) - Research               | 1  |
| MSc (Geoscience Exploration) - Coursework | 3  |
| PhD                                       | 13 |

### 2000 GRADUATES WERE:

#### **Doctor of Philosophy**

Milovan Urosevic

#### **Master of Mineral Exploration Technologies**

##### *By coursework:*

Makhosini Marco Nyoni

#### **Postgraduate Diploma in Geophysics**

Zaharah Ramli

#### **BSc (Geophysics) Honours**

Brett C Adams

L. Robert Bril

Jodie L. Crystal

Jeromy E. DePledge

Susannah M. Elvey

Megan Evans

Geoffrey Garton

Benjamin L. Hall

Darren P. Hunt

Gerard B. Laurent

Trang K. Nguyen

John K. Odgers

Alexander K. Pauli

Trent B. Shawcross

Gregg J. Speyers

Michael A. Wilkins

#### **BSc (Geophysics)**

Luke J Brown

Tristan W. Campbell

Robert J. Galvin

James L. Jensen

Martin T. Kim

Chad Latham

Margarita Norvill

Matthew S. Noteboom

Karen J. Pittard

Claire M. Robertson

#### **Bachelor of Science - Multidisciplinary Science (majoring in Geophysics)**

Christopher P. Hudson

### MID-YEAR 2000

#### **Doctor of Philosophy**

Donald Hosking Sherlock

Michael Paul Sykes

#### **Master of Mineral Exploration Technologies**

##### *By coursework:*

Kim Leanne Cook

Neil Arthur Hughes

Michael James Sharry

Congratulations are extended to, **Donald Sherlock, Michael Sykes** and **Milovan Urosevic** on being awarded their PhDs in 2000.

## HONOURS STUDENTS

Honours Students for 2001 and their project titles are listed below:

#### **Petroleum**

**Luke Brown**, *Seismic response to hydrate*

**Richard Adam Frew**, *Investigation of surface elastic waves in isotropic and anisotropic media*

**Robert Galvin**, *Calculation of correct elastic wave amplitudes for simple three-dimensional Earth models in seismic exploration using computer algebra*

**Christopher Hudson**, *Integrated time lapse three dimensional fluid flow modelling*

**Martin Kim**, *Fluid and lithology prediction within a coal sequence using seismic attribute modelling and analysis (Gippsland Basin)*

**Chad Latham**, *Multi-component seismic phase relationships*

**Mitchell Tomlinson**, *Converted wave imaging over the Barrow Island oil field where p-wave data is of poor quality*

#### **Minerals**

**Bronwyn Calleja**, *Soil mapping using airborne radiometrics and magnetics*

**Tristan Campbell**, *The use of micro-scale geophysics in monitoring the water uptake and zone of influence of trees*

**Margarita Norvill**, *The role of regional and detailed gravity and magnetics in exploring for gold and copper ore deposits in the Tennant Creek area, Northern Territory*

**Matthew Noteboom**, *Feasibility of dipole-dipole IP in the presence of conductive overburden*

**Karen Pittard**, *The IP effect of magnetite*

## PRIZES

Congratulations to **Luke Brown** who was awarded one of the PESA WA Undergraduate Prizes for 2000. Luke received \$500.00 as the best Third Year Geophysics Student.

## CRCLEME

Exploration Geophysics and Applied Geology (Bentley) and Mineral Exploration and Mining Geology (Kalgoorlie) at Curtin University will be participants in the CRC for Landscape Environments & Mineral Exploration which will be operational from 1 July 2001.

This CRC will integrate regolith geology and geochemistry with geophysics for mineral exploration break-throughs in areas of substantial cover and environmental applications.

## CONFERENCES

### The 5<sup>th</sup> SEGJ International Symposium

John McDonald and Mu Luo attended the above conference held in Tokyo from 24-26 January 2001. John was Co-Chair representing the Australian SEG and Mu Luo presented the following paper:

**Luo, M., and Evans, B. J., 2001, *A new method for fracture mapping using 3-D seismic data*: Proceedings of the 5<sup>th</sup> SEGJ International Symposium – Imaging Technology -, Soc. of Explor. Geophysicists of Japan, 277-281.**



*At the SEG International Business Meeting, Arcadia Ichigaya, Tokyo, Japan; society representatives*



*John McDonald thanks the SEGJ on behalf of the Australian SEG*

## JOURNAL PUBLICATION

Sykes, M.P., and Das, U.C., 2001, *Directional filtering for linear feature enhancement in geophysical maps*: *Geophysics*, **65**, 1758-1768.

## COMPUTING

We are pleased to have received an increase in Landmark donated software, which included two copies of 3DPSDM and three copies each of SeisWorks 2D and 3D. This extension to the Landmark software donation has a commercial value of US\$674,000, bringing the total Landmark software donation to A\$8,000,000.

## NEW APPOINTMENT

In January 2001 **Dr. Boris Gourevitch** was appointed Professor of Petroleum Geophysics. The position is sponsored jointly by the Centre of Excellence for Exploration and Production Geophysics, and CSIRO Division of Petroleum Resources. In the last five years he worked as a senior research geophysicist at the Geophysical Institute of Israel. Boris is expected to strengthen the theoretical aspects of the Department's petroleum geophysics research in such areas as rock physics and seismic imaging.

## VISITORS

On 19 and 20 March the Department hosted a visit by **Prof Joe Figuera**, the Vice Chancellor for Research at Montana Tech, and **Assoc Prof Curtis Link**, Dept. Chair, Dept. of Geophysical Engineering also from Montana Tech. Their goal was to put in place some arrangements/agreements for foreign exchange visits. While here Curtis also gave a presentation at the monthly meeting of the Australian Society of Exploration Geophysicists (ASEG).

**Assoc Prof Christopher Juhlin** from Uppsala University, Sweden is visiting the Department from 1<sup>st</sup> January to 30<sup>th</sup> April 2001. During his visit he has been working with Dr Milovan Urosevic on the MERIWA funded project entitled: *Using seismic anisotropy to characterise seal and reservoir properties in the North West Shelf area of WA*.

## APCRC WORKSHOP

The annual APCRC Workshop was held at Encounter Bay, south of Adelaide from 13-15 February.

As part of the workshop this year, there was a field trip to the Fleurieu Peninsula; the area south of Adelaide.

The trip concentrated on showing the Adelaidean succession where tilted Precambrian (650 – 700 Ma) sedimentary rocks have been eroded then overlain by the Carboniferous to Permian Gondwana glacials (about 300 Ma). Late Tertiary sediments (about 4 Ma) are flat and overlie the tilted old rocks. This tilting occurred in a series of pulses, with times of the peak activity around 48 Ma, 40 Ma, 20 Ma and 2 Ma.

The current topography around Adelaide and the areas to the south is a reflection of the tectonic forces which operated to create a number of basins. Some major faults in the area had a recent major pulse of activity, one and two million years ago. These faults pose a risk to Adelaide and its inhabitants.

## STAFF NEWS



Congratulations to Chris and Suzie Manuel who were married on 16 September 2000. Chris is one of our PhD Students.

## STOP PRESS:

We are preparing to advertise a vacancy for Associate Professor in Mineral Geophysics. Please watch our web site.