

LAUNCH: COAL MINING ROCK ENGINEERING BOOK

The publication 'Rock Engineering for Underground Coal Mining' (ISBN 1-919 783-34-2) was launched at a cocktail party held in Witbank on 25 April 2002.

The launch was attended by the Deputy Chief Inspector of the DME, Piet Botha, the SAIMM President, Alistair Douglas, mining officials, SAIMM members, SACMA office bearers, Wits Technikon students, and SIMRAC members and researchers.

In his welcoming address, Duncan Adams of SIMRAC Project Support Services told delegates that the need for the book was identified in 1993 and listed as SIMRAC project COL 001 by the SIMCOL Advisory Group. In 1999 project COL 606 was finally contracted to CSIR Mining Technology.

The book was co-authored by Nielen van der Merwe and Bernard Madden and published and printed by the South African Institute for Mining and Metallurgy (SAIMM).

The book is available from the SAIMM. Contact Karen du Toit at phone number 27 834 1273 to order a copy.



Nielen van der Merwe, Duncan Adams and Bernard Madden with the newly published Rock Engineering book for coal mines in SA



Alistair Douglas, Duncan Adams and Piet Botha



Duncan Adams talking to Wits Technikon students

IN THIS ISSUE

- ♦ Handbook on Rock Engineering in South African coal mines underground.
- ♦ Calendar of Events
- ♦ Training symposium on improved x-ray reading for mining medical officers
- ♦ SIMRAC Research Programme for 2002-2003
- ♦ Doctoral study on ionising radiation co-funded by SIMRAC

CALENDAR OF EVENTS

MEETINGS

SIMRAC

16 May 2002

18 July 2002

12 September 2002

Research Needs Analysis Workshop:

20 August 2002

Government Gazette Tender for 2003

20 September 2002

Meetings: Simpross Progress Meetings

23 May 2002

30 July 2002

22 October 2002

LAUNCHES AND WORKSHOPS

The following is planned:

Rock Engineering

30 May 2002 and **6 June 2002:** OTH 501 & OTH 602 [Stability of stope panels & Best practice rock engineering handbook]

20 June 2002: GAP 615 [Influence of regional pillars & backfill on local area and internal support] (Regional Workshop)

Launches are planned during **July 2002** on GAP 605 [Potentially damaging seismic events associated with geological structures] and GAP 828 [Mining layout]

Contact Duncan Adams per phone on 011 358 9184 or email dadams@simpross.co.za

Engineering

23 May 2002 Launch of GEN 701 [Best practice on design, installation, maintenance and operation of conveyer belt systems]

June 2002 GAP 704 [Ergonomics of locomotive design in mines]

July 2002 COL 701 [Dust control in thick seam operations]

August 2002 COL 807 [Inertisation in inbye and outbye areas]

Contact Alec Gumbie per phone on 011 358 9186 or email agumbie@simpross.co.za

Health

July 2002 Health 808 [Technology transfer programmes to enhance clinical performance in TB management]

August 2002 Health 605 [Welding Guidelines]

Contact Mary Ross at mross@simpross.co.za or per phone 011 358 9183

Training symposium held on improved x-ray reading for mining medical officers

About 30 mine medical officials attended the training symposium held on Saturday 16 February 2002 in Johannesburg as part of project HEALTH 803, 'Radiological occupational lung disease surveillance' (ROLDs), in an endeavour to improve x-ray reading skills for medical personnel in the mining industry.

The programme is focused on developing distance-based training materials and the evaluation of skills.

For more information, please contact Professor Neil White at the University of Cape Town Lung Institute, telephone number 021 406 6850 or 021 404 4360.



Ray Glynn-Thomas with attentive students.



f.l.t.r. Ray Glynn-Thomas, Mary Ross, Neil White, Lindiwe Ndelu, Albert Solomon, Khanyakude Mashao, Hillar Goodman and Jill Murray.

SIMRAC Research Programme for 2002 - 2003

The SIMRAC research programme for 2002 was approved on 27 February 2002 at a total cost of R39, 327 million.

*Note: New projects are now listed according to thrust areas, unlike the earlier numbering system using an alphanumerical order based on commodities. The new numbering system of 6 digits, for example **02 01 01** refers to the specific year of the project, i.e. **2002**, the first thrust area **01**, i.e. **Behavioural safety**, and the number of the project in that thrust, namely **01**.*

Contracts have been approved for the following projects. Continuation projects are also listed:

Behavioural safety

- Safety culture in the SA mining industry (P Schutte/ R Hill) 02 01 01
- Industrial Technology, rights & politics of transformation (University of Natal) 02 0102
- Alcohol study (Witwatersrand University) HEALTH 712

Rock falls

- Development of an effective 'pinch' bar (University of Pretoria) 02 02 01
- Determination of remote stresses in the rock mass (SIGRA /CSIR) 02 02 02
- Effective support for tabular stopes (University of Pretoria) 02 02 03
- Effective support for tabular stopes (CSIR) 02 02 04
- Investigation into support systems in SA collieries (CSIR) 02 02 05
- Guidelines for the design and testing of Thin Sprayed Linings (CSIR) 02 02 06
- Technology transfer of strata control knowledge (CSIR) 02 02 07
- The use of tendon support in tabular stopes (CSIR) 02 02 08
- Joint orientations, spacings & lengths (Witwatersrand University) 02 02 09
- Corrosion on the behaviour of steel fibre reinforced shotcrete (Witwatersrand University) 02 02 10
- 3-D analyses of stress & strain distribution (Witwatersrand University) 02 02 11
- Database of pillar collapses suitable for statistical analysis (University of Pretoria) 02 02 12
- Gap 811 Preconditioning at varying stoping widths (CSIR)
- Gap 851 Trial training in strata control (CSIR)
- COL 812 Rating system for coal mine roofs (CSIR)

Rock bursts

- Integration of seismicity and numerical modeling (CSIR) 02 03 01
- Proactive approaches to rock mass stability and control (ISSI) 02 03 02
- Guidelines for safe extraction of remnants (CSIR) 02 03 03
- Improved Seismic Locations and Location Techniques (University of Pretoria) 02 03 04
- Testing of stope support systems under dynamic loading (SRK) 02 03 05
- Stope face fracturing/bursting & the effect of face support (Witwatersrand University) 02 03 06

Explosions and Fires

- Training package to reduce the risk of gas explosions (Itasca) 02 04 01
- Inertisation of inbye & outbye areas computer package (CSIR) 02 04 02
- Evaluate & test active machine mounted explosion systems (CSIR/HS Design) 02 04 03
- Ranging open path remote methane detector (CSIR) 02 04 04
- COL 713 Prevention of spontaneous combustion of coal discards (Grooteegeluk)

Machinery and transport systems

- Test modified detaching hooks & need to develop safer hooks (ATD) 02 05 01
- Factors affecting driver alertness (CSIR) 02 05 02
- Re-railing of underground rolling stock (Turgis Technology) 02 05 03
- Ergonomics of machinery and transport (CSIR/NCOH) 02 05 04

(Please turn over)

Airborne Pollutants

- Measurement of ultrafine silica exposure in fume (Infotox) 02 06 01
- Diesel exposure measurement and reduction (Infotox) 02 06 02
- Silica Control [Phase 1] 02 06 03
- Dust Generation Potential of SA Coal Seams (Witwatersrand University) 02 06 04
- Health 704 Real time dust measurement

Physical hazards

- Evaluation of new methods for NIHL screening and diagnosis (Hearing Center) 02 07 01
- Body cooling garments (CSIR) 02 07 02
- Vibration – seating (University of Stellenbosch) 02 07 03
- Health 806 Best practices to prevent adverse effects of Noise & Vibration (CSIR; NCOH; US; UP)
- Gap 726 Vibration absorber for rock-drill (University of Pretoria)
- Gap 801 Finalization of the quiet rock drill (University of Pretoria)

Occupational Diseases

- Development of x-ray reading skills in the mining industry (OMCRU) 02 08 01
- TB management in the SA mining industry (NCOH) 02 08 02
- Silicosis Programme (University of Cape Town) 02 08 03
- Additional Health bursary 02 08 04
- Health 701 TB prevention RCT (Aurum)
- Health 705 Sputum study (Aurum)
- Health 606 Lung disease / exposure (Aurum)
- GEN 524 MMR study (Aurum)

Special Projects

- Effects of nutrition & housing provision on OHS (CSIR/MRC/ Witwatersrand University) 02 09 01
- Historical documents re. health and safety (Advantage Consulting) 02 09 02
- Occupational handbook on safety practice in South Africa (Siyazi) 02 09 03
- Slipping, falling & manual handling accidents (CSIR) 02 09 04
- The evolution of South African mining research (University of Cape Town) 02 09 05
- Health 809 Occupational Health services on small mines (Lapheka)

For more information on the research programme, contact the research manager, Paul van der Heever or programme managers Mary Ross (Occupational Health), Alec Gumbie (Engineering) or Duncan Adams (Rock Engineering) at 27 11 358 9180.

Doctoral study on ionising radiation co-funded by SIMRAC

The Cape Technikon conferred its first doctoral degree on Kathy Meehan for her dissertation on the effects of exposure to continuous low doses of ionising radiation on bats.

SIMRAC partly sponsored the work.

In her study Dr. Meehan studied the effects of radiation emanating from disused Monazite mines near Steenkampskraal in the Northern Cape on the endangered Cape bat, *Rhinolophus capensis*. (See photo below).

In a comparative study using unexposed bats, Dr. Meehan was able to determine that exposed bats show signs of dose dependent DNA damage, evidence of abnormal bone structure and a marked decrease in osteoid mineralisation which is an indicator of myelodysplastic syndrome, a progenitor to haematopoietic cancers.

Phone Mary Ross at 011 358 9183 for information on postgraduate occupational health bursaries.

