

One school World class Industry endorsed



Adelaide on board

The University of Adelaide is now a member of MEA and joins with three of Australia's other top universities - The University of New South Wales, Curtin University of Technology and The University of Queensland in a world first in undergraduate mining education.

The significance of this new partnership is that MEA now covers the major mining regions throughout mainland Australia, with campuses in Western Australia, New South Wales, Queensland and now South Australia.

The University of Adelaide investigated a range of options for delivery of a mining program in their state. Joining MEA became the logical solution for delivery of 3rd and 4th year courses. "MEA appealed as it is unique both nationally and internationally" said Professor Martin Lambert, Head of the Civil, Environmental and Mining Engineering School at the University of Adelaide. "Having the courses already written to world standard was a huge plus". "The collaborative approach and common curriculum offer many benefits to staff, students and the industry" he said. "MEA has all the experts in this field and each University gets to access this."



"Now that The University of Adelaide has joined MEA, a further 50 students have entered, taking the MEA 3rd year 2009 total to approximately 224." Prof. Hebblewhite said. "By joining with MEA, The University of Adelaide is now able to meet a need for mining education in South Australia. MEA should see the state resourced with skilled workers as they build their resource base" said Professor Lambert. "It raises the bar for universities and engineering education in general. We are looking forward to working together to continually build improvements."

The new MEA Program at The University of Adelaide is headed up by Associate Professor Emmanuel Chanda. "The combined knowledge and experience of mining academics in MEA is far greater than any individual mining department can provide anywhere in the world, and our students have access to this expertise", says A/Prof Chanda.

Martin Lambert and Paul Dunn



MEA worth supporting....

Prof Paul Dunn, Director of Western Australian School of Mines says that ongoing support of MEA is most important. The *Back from the Brink* report prepared by the industry in 1999 highlighted several areas for improvement in mining education and MEA has responded, with development of world class mining education teaching resources and a program that is now operating across the country. "We are not there yet but have achieved an extraordinary amount in a short space of time" says Prof Dunn. Dr Peter Knights from University of Queensland agrees. "A national collaborative effort like MEA works when colleagues know and trust one another. This requires regular meetings which, in a big country like Australia, costs money. In addition, there must be a "carrot" for partner universities to invest the extra effort required to make collaboration work."

"MEA provides a sustainable platform for mining engineering education that is the envy of other countries. Students benefit by having access to top quality educational resources and subject matter experts at partner universities. Academics benefit by presenting a unified voice to industry and participating in opportunities that only a national network can provide. Industry benefits by having access to a greater number of graduates with nationally recognized qualifications."

"The University of Queensland is proud to be a founding member of MEA. During the recent mining boom we had difficulty attracting staff and our colleagues at UNSW, WASM and the University of Adelaide greatly assisted us, particularly in the area of rock mechanics. Students and professional bodies have praised the quality of MEA teaching materials" said Dr Knights.

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Welcome to the second issue of MEA News – our regular newsletter designed to inform all stakeholders of what is happening across MEA, and what is being achieved.

This newsletter is targeted at both the education institutions, and the Australian minerals sector.

In this issue, we celebrate two major recent achievements. Firstly, The University of Adelaide, which began a mining program in 2007, has joined MEA in 2009, now that their first group of students has reached the third year of study. It is highly appropriate that Adelaide be part of MEA, representing a quality educational institution in a state and geographic region with major mining significance. We welcome the Adelaide team on board MEA and look forward to them rapidly integrating into our operational structure. The second major achievement has been the graduation of our first MEA graduates – 123 of them across three states, less than five years after MEA was nothing more than an educational concept on the drawing board of a few mining academics. Well done to our inaugural graduates, and we trust that in the years to come, you will look back on your MEA education as a valuable achievement and preparation for your careers.

When MEA was just a concept, developed out of one of the Minerals Tertiary Education Council (MTEC) initiatives, the original (and current) primary objectives were to:

- produce more mining engineering graduates for the Australian minerals industry;
- provide those graduates with a more comprehensive, and higher quality educational experience, through development of a new and industry-appropriate national curriculum, and with educational input from, and access to a wider national pool of mining academics;
- implement more innovative and effective teaching and delivery methods;
- support the resources of the various educational institutions by encouraging the above collaborative educational processes, and providing financial support to ensure the long-term sustainability of the collaborating partners.

MEA is already delivering on all of the above objectives. At the time in 2003 when MEA was first being developed, national mining engineering graduate numbers were below 100, with even less students in the pipeline as commenc-

ing students. Since that time, student intake has more than doubled, such that the current 3rd year of the MEA program across all four MEA universities totals over 220 students – which positions us well to meet the MEA graduate target, which at the time was set at 180, and subsequently raised to 210 – 220, out of a national target which was raised from 150-200, to 250 graduates per year.

MEA has also clearly delivered on the objectives regarding the comprehensive and high quality nature of the new curriculum, which provides our graduates with far-greater portability of their degree, as they enter or move through the workforce – both within Australia and internationally.

Our MEA staff has achieved a level of collaboration which has exceeded all expectations, such that every course is “owned” and “managed” by a dedicated four person team across the MEA partnership. We are also now using an ever-expanding range of innovative new technologies for course delivery, with on-line interactive classrooms operational at all sites, together with the use of podcasting, virtual reality teaching modules and much more.

What is critical in order to continue to meet these objectives, is that the industry’s continued investment in MEA is an essential, long-term ingredient, to provide the sustaining capital to keep this form of education functioning, through the current, and no doubt future financial crises and industry cycles. There is inevitably a minimum four year lag between students being attracted to study mining engineering, and graduating with their MEA degree four years later, during which time industry fortunes may have changed.

Academic programs cannot be turned on and off to suit ups and downs of industry. Once gone, history from other parts of the world tells us that mining educational programs are unlikely to be re-established, hence the importance of maintaining the financial support for such an important program as MEA to continue to operate, develop and flourish, for the continuing benefit of all stakeholders.

As always, we welcome any feedback – questions, comments or suggestions. Please feel free to contact me, or visit our website at www.mea.edu.au

Bruce Hebblewhite
MEA Executive Director

Introducing Dr Andrew Jarosz

Dr Andrew Jarosz was the Head of Department at West Australian School of Mines in Kalgoorlie until July 2009. Coming from Poland where he studied at the Krakow University of Science and Technology Andrew has worked and lectured in the USA, South Africa and came to Australia in 1996. He is currently relishing his role as MEA Program Leader at WASM.

As a mining engineer who initially specialised in mine surveying and subsidence engineering, Andrew is currently involved in mine planning and optimisation whilst still maintaining his mine surveying interests.

Career highlights

1. Design of safe underground coal mining and assessment on its impacts on surface and infrastructure of Katowice city in Poland.
2. When at Virginia Tech, involvement with Prof Mike Karmis in assessment of sea floor stability and subsidence induced by sulphur extraction in Gulf of Mexico by Freeport-McMoRan. Visit of the Freeport’s sulphur extraction operation and one of their mid-sea platforms.
3. Leading the second phase of the research project aiming on development of inspection and surveying tool allowing inspection of otherwise inaccessible vertical ore passes. This tool was tested in the Grassberg Mine in West Papua, one in the largest gold mining operations in the world. Being first in the world to inspect and survey ore passes that are 650m deep.

Current projects

Andrew is currently involved in development of the next version of the ore pass inspection tool which will be fully portable allowing its easy air transportation to any remotely located mine site. Working in collaboration with Dr Jonathan Paxman from Curtin University Mechatronics Group, testing of the development in Grasberg Mine is planned for the later part of 2009.

Andrew’s thoughts on MEA program

“MEA has the potential to become the

“MEA has the potential to become the leading mining engineering program world-wide”



leading mining engineering program worldwide. Its strength is in fostering collaboration between mining academics involved in teaching and research covering

a wide range of technical disciplines. The "All Staff Workshops" are the excellent and unique platform to inform, share and learn about experiences of others. This will lead to overall better educational programmes at all universities involved."

Andrew's thoughts on MEA students

Andrew sees the MEA students as the "clever bunch". "The best students are able to combine high academic standards with practical applications and industry and community involvement". Andrew has noticed the entrepreneurial abilities of his students who manage to organise and raise funds for yearly international mining field trips or to participate in International Mining Games. "The national exposure that MEA gives to local programs is assisting in attracting these high calibre students" he said.

Challenges ahead in mining education?

"The future brings competition to the environment of university education. The Federal Government plans to abolish intake student quotas in 2012 and provide support directly to students. This will definitely open up this competition. The institutions offering high quality and industry-recognised mining education programs will have an extra edge over others. MEA can provide such insurance but only if the spirit of collaboration and the high quality on offer is maintained.

What does MEA do well?

"MEA maintains links with industry and successfully involves people working in collaboration. It is continually improving its educational offerings through regular review and the assessment of quality". Andrew sees these are benefits for MEA lecturers. "Being part of the recognised Australian Mining Education Community and able to exchange ideas and experiences to continually improve is very satisfying" he said.

Congratulations!

MEA first graduates

2008 saw the successful completion of studies for the first cohort of mining engineering graduates from the three MEA founding member institutions. In all, 123 students graduated from this first stream of students who passed through the inaugural MEA programs – 3rd year courses in 2007 and 4th year in 2008. Whilst these students were effectively "guinea pigs" in this totally new and exciting concept of collaborative education, and suffered from a few minor teething problems as the new courses were introduced, they were also the beneficiaries of the new and comprehensive MEA curriculum, which had been developed in close consultation with both academics and industry representatives across the country.

The University of Queensland was the first of the three universities to hold their graduation ceremony for the 2008 MEA graduates – on the 10th December, 2008. Speaking at a special UQ pre-graduation function,

Executive Director of MEA, Professor Bruce Hebblewhite said "These students are the first to graduate from this world first national undergraduate mining education, and are the first graduates from any undergraduate mining course to have had access to the comprehensive education of innovative delivery and learning methods that MEA delivers".

"The students graduating from this program are also the first ever to enter the workforce with a Mining Education Australia certificate which is industry endorsed." "This is a true win for industry, educators and students".

UNSW and Curtin (WASM) held their graduation ceremonies for the 2008 students on 23rd April, 2009 and 15th May, 2009, respectively. Both these ceremonies included presentation of their MEA Certificates by Professor Hebblewhite, to the graduating students.



MEA at a glance

- > 2009 annual budget +\$2.5M
- > 19 MEA courses fully developed and implemented
- > 1657 student MEA course enrolments in Semester 1, 2009
- > 369 mining engineering students enrolled across the 3rd/4th year MEA program (2009)
- > 32 MEA mining academic staff across four universities
- > Courses taught in NSW, Queensland, South Australia and Western Australian, with offshore interactive teaching to Canada

Student Profile



Jason Hatwell

Jason Hatwell is a third year MEA student at The University of Adelaide studying finance and mining engineering. Jason took up the recommendation to become a mining engineer by a family member (who currently works as a chemical engineer for BHP Billiton) and is optimistic about his career choice and doing studies through MEA.

What was your motivation to get into studying mining engineering?

I realise that mining will play an important role in the future economic wellbeing of the Australia and Australians. With the emergence of China and India as new world growth centres and the renewed interest in nuclear energy, mining is an industry with enormous opportunity and importance to Australia and these challenges and opportunities both excite and motivate me.

What do you like about mining engineering?

Mining engineering interests me because it offers an exciting and challenging opportunity and career. It would allow me to use leadership, creative thinking and problem solving skills in an environment, which is both demanding and motivating.

What would you want from your employer?

I would want my employer to provide a safe work environment that encourages my professional development and also affords the opportunity to travel.

Have you done any work experience/ vacation work?

I have worked for BHP Billiton Summer Vacation Program for the past two years as part of the Olympic Dam Expansion Project assisting with Business Evaluation. I edited, compiled and distributed monthly reports for senior level executives and the wider ODX project members.

What's the best thing about studying with MEA?

MEA provides a well-rounded and practical approach in the training of future mining engineers. The scope of the subjects prepares students well for their future professional careers. I also like the concept of moderation across universities meaning that all graduates will be considered on the merits of their academic achievements regardless of the higher education institution attended.

Where do you see yourself in 10 years?

Ultimately, I see opportunities to combine my mining and finance skills and qualifications in resource estimation and analysis. I will be immersed within a professional mining operation with key resource interests both within and outside Australia and will be working as part of a team of professionals committed to the success of the team, project, company and shareholders.

MEA Future Graduate Projections

2008 (actual)	123
2009	155
2010	215
2011	220

Industry Involvement

To enhance classroom studies and build links with industry, MEA students participate in mine site visits and guest lectures by industry professionals. MEA would like to thank the following companies for their participation and support.

Site Visits

Brukunga Mine SA Department of Primary Industries and Resources
Xstrata Ulan Coalmine
Cadia Valley Operations (Newcrest)
North Parkes (Rio Tinto)
Broken Hill Mine (Perilya)
Rasp Mine (CBH)
Pooncarrie Mine (Bemax Resources)
Myuna Colliery (Centennial)
Ulan Coal (Xstrata)
Bulga, Beltana (Xstrata)
Mt Arthur Coal Mine (BHP Billiton)
Orica Mining Service
Frog's Leg Mine
Kalgoorlie Consolidated Gold Mine
Focus Mining
Lanfranchi
Silver Lakes
Otto Juan
Lightning Nickle
Paddington Gold Mine

Guest Lecturers

New Hope Coal Australia
Coffey Mining Pty Ltd
Colwell Geotechnical Services
Leighton Contractors Pty Ltd
Paddington Gold Mine
Otraco
Jean-Michel Rendu, International Mining Consulting
Kaltim Prima Coal, Indonesia
Vulcan
Whittle
Rio Tinto
Minex (Gemcom)



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