IAH Seven Wonders: Gins Leap Gap Hydrogeological Wonder

Inside this AIG News...

IAH Seven Wonders: Gins Leap Gap Hydrogeological Wonder: Upper Namoi Valley, NSW, Australia • Bursary Report: In Situ Fe isotope analyses by SIMS • The Spirit of Ecstasy replaced with a Workhorse • Upcoming events • Forensic down-the-hole geology in search of gold • Geological mapping procedures for Porphyry Cu-Au and Epithermal Exploration • INTRAW – International Raw Materials Observatory: A new international project on raw materials • Ethics Report: What sort of complaints does AIG deal with regarding members’ conduct? • Yilgarn Retrospective • AIG Member Offer: AMIRA’s Data Metallogenica • PACRIM 2015 in Hong Kong • And much more...
OPTIRO 2015 Professional Development Courses: using real-life data-sets

The Optiro courses give you the knowledge, skills and tools to confidently and efficiently work on your own. The courses take you step-by-step through the processes - using real-life data sets - to ensure you gain the practical experience you need to immediately put what you have learned into practice when you are back at work. Each training-day has a 7PD HOURS AusIMM rating.

Essential Excel Skills for Geologists
key tips, tricks, tools and templates to save you time and effort – and make your work look great!

Sampling Theory and Best Practice
understanding the key issues - how to optimise the frequency, size and the nature of the sample, and quantifying the errors associated with the sample. Practice of how the sample is taken, delimited, reduced, transported and prepared; and the theory of how to measure the errors associated with our sampling protocols; to optimise those protocols.

Getting The Most Out of QAQC Data
covers the QAQC life cycle: planning types and frequencies of QAQC data to be collected; mechanics of collecting, transporting and submitting samples; analyses for systematic and trending errors; what is and what isn’t a failure; making changes in the resource database.

Reconciliation - getting it right the first time
all aspects of reconciliation process, including key data to be collected, importance of unbiased measurement of volumes, tonnages and grades (among other metrics). How to map out the production data flow and discuss the important measures of performance – using real-life data.

Resource Estimation and Evaluation
uses a real-life data set to cover the entire resource estimation and evaluation cycle and its requirements - from data collection and quality assurance through to classification. The 5th day of the course consolidates all that you have learned by taking you step-by-step through a check-list of the resource estimation and evaluation processes, and gives you the opportunity to bring your own data along to discuss and get advice on.

Recoverable Resources: getting to the High Grade
demystifies and solves one of the great paradoxes of project evaluation – how to do more with less information. How to assess the recoverable resources for project valuation when the relative drill spacing does not provide sufficient coverage for the direct estimation into small blocks or selective mining units (SMU) required at the production stage.

Report Writing for Geologists and Engineers
how to plan your document; write your summaries and conclusions; the essential grammar rules; styles and formatting; key features and time-saving tips in Word; how to review your document and review others’ documents; how to write the references, abbreviations, acronyms, glossaries and the appendices; and how to achieve your objective of writing an accurate report that grabs your readers’ attention!

Mining & Geology Fundamentals for Non-Miners
this course has been designed for non-miners working, investing, financing or associated with the mining industry – who need to understand the key fundamentals about the mine cycle, from exploration through to mine closure.

You can register online at: www.optiro.com/training-and-mentoring/

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From Your President

On Professionalism

H is card read “Have Hammer – Will Travel – Professional Geologist”. There were no post-nominals after his name. I was sceptical. We were standing on a colluvium fan as he explained that gold was sourced from the nearby Searchlight District (an hour’s drive south of Las Vegas) but could not be assayed yet his client’s propriety recovery system was producing heaps of gold from the very gravel we were standing on! Of course it was a scam but what could I do? There was no professional association to complain to and the “Professional Geologist” had no Code of Ethics to abide by.

I have recently been involved in several discussions on what it means to be a Professional Geoscientist and how AIG goes about monitoring compliance of our codes by members.

The first discussion was in Hong Kong at the PACRIM 2015 conference (co-sponsored by members. The idea that the JORC Committee should take on a watchdog role lead to another meeting that gold was sourced from the nearby Searchlight District (an hour’s drive south of Las Vegas) but could not be assayed yet his client’s propriety recovery system was producing heaps of gold from the very gravel we were standing on! Of course it was a scam but what could I do? There was no professional association to complain to and the “Professional Geologist” had no Code of Ethics to abide by.

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The first discussion was in Hong Kong at the PACRIM 2015 conference (co-sponsored by the AIG) at an informal meeting with AusIMM members about the apparent under-reporting of JORC Code breaches and how that may threaten external confidence in the Code. We all could recite recent cases of dodgy reporting but both AIG and AusIMM receive few complaints. Is this a case of Aussies don’t dob in their “mates” or is it a lack of confidence in our compliance systems? If it’s the latter we need to better publicise the complaints/ethics review process and their outcomes. It was also suggested a portion (2-5%) of releases should be vetted by a review panel to provide a watchdog approach for industry and investor awareness. It is agreed that such a panel be instigated under the auspices of the JORC, funded by the parent bodies. The idea that the JORC Committee should take on a watchdog role lead to another meeting that gold was sourced from the nearby Searchlight District (an hour’s drive south of Las Vegas) but could not be assayed yet his client’s propriety recovery system was producing heaps of gold from the very gravel we were standing on! Of course it was a scam but what could I do? There was no professional association to complain to and the “Professional Geologist” had no Code of Ethics to abide by.

A few last words on professionalism as it applies to AIG members. All AIG members are required to have a minimum of five years relevant professional experience, but is this enough? Should members demonstrate continuous improvement over their careers?

Some of the ideas thrown up included:

- Need for a focus on education and policing of the Code;
- Members need to be continually reminded that they have an ethical responsibility to report any breach of a code of practice binding on members, including JORC;
- Need for clarification of the term “competence” especially with regard to resources;
- Need for clarification of the roles of professional bodies and a system of sanctions for companies and individuals;
- Suggestion that JORC reports be in an on-line repository with public access which would expose CPs to more peer review;
- An agreement to complete a Green Paper addressing compliance and policing to be prepared by AIG’s JORC Committee representatives.

I look forward to the Green Paper which will be published for comment in AIG News. The idea that JORC takes on a watch dog role takes on more urgency with the recent news that ASIC will eliminate the position of Senior Specialist (Geology) – Emerging Mining & Resources due to budget cut-backs. The Senior Specialist (Geology) provided a critical liaison between ASIC and Competent Persons engaged in preparing reports for public companies for the protection of investors. In response to a letter to ASIC expressing our concerns, ASIC replied “A meeting between AIG and other resource industry bodies to discuss poor conduct in the industry would assist ASIC with providing this protection.”

My last meeting was with the Task Group on Global Geoscience Professionalism (“TG-GSP”) which was formed by the International Union of Geological Sciences at the 34th International Geological Congress in Brisbane, in 2012. AIG is a member of TG-GSP whose purpose is to provide a single global forum for interchange on professional affairs in geoscience worldwide. An important part of TG-GSP's mission is to foster a shared understanding of aspects of professionalism relevant to individual scientists and applied practitioners working in the geoscience profession. These may be summarised as competence, ethical practice, and professional, technical and scientific accountability. AIG is the sole Australian member in this Task Group.

AIG News Issue 120 • May 2015

Wayne Spilsbury

President
AMC Specialist Technical Workshops

January – December 2015

AMC Consultants Pty Ltd (AMC) is a leading independent mining consultancy, providing services exclusively to the minerals sector. We are pleased to announce dates for our specialist technical career development workshops. Participants on all workshops will receive a bound, full-colour workshop manual. AMC can also run these workshops in-house and tailor them for your specific needs. Discounts are available for participants who attend several workshops in the same week (March, June, August, November).

JORC 2012—Complying with the Code in the Reporting Environment

Brisbane: 4 March, 24 June, 26 August, 18 November
Presenters: Peter Stoker and Mark Berry

This half-day workshop will present the fundamental requirements of the JORC Code, including new and changed provisions adopted in 2012. Examples of compliant and non-compliant reports will be reviewed, including case studies. This workshop is designed for existing and intending Competent Persons and management staff at all levels.

Lessons Learnt from Auditing Mineral Resource Estimates

Brisbane: 5 March, 25 June, 27 August, 19 November
Hong Kong: 21 March (in conjunction with PACRIM 2015)
Presenters: Peter Stoker and Mark Berry

This one-day workshop will present key learnings from AMC’s extensive international audits of mineral resource estimates. It is designed to provide new and senior geological staff with insights into best practice and common problems. Topics covered will include drill programme design and drilling, surveying, sample preparation and analytical techniques, logging and related processes, geological interpretation and domaining, geostatistics, estimation, classification, reporting, QA/QC processes, and data management.

Preparing Appropriate Inputs for Robust Grade Estimation

Brisbane: 2 March, 22 June, 24 August, 16 November
Presenter: Alex Virsheff

This one-day workshop will present fundamental considerations and understandings in preparing information as inputs for completing a mineral resource estimate. It is designed to provide guidance on addressing issues associated with data inputs to grade estimates and grade estimation tasks.

Register online at www.amcconsultants.com/training
For more information, contact: Alana Phillips: (T) +61 7 3230 9000 (E) bristraining@amcconsultants.com

Delivering High-quality Grade Estimates

Brisbane: 3 March, 23 June, 25 August, 17 November
Presenter: Alex Virsheff

This one-day workshop will present fundamental considerations and understandings in carrying out grade estimation in completing a mineral resource estimate. It is designed to provide guidance on setting grade estimation parameters, selecting grade estimation methods, and completing validation of grade estimates.

Assessment of Geological Uncertainty in Mining and Management of Risk

Brisbane: 6 March, 26 June, 28 August, 20 November
Presenter: Mark Berry

This one-day workshop will identify and assess the sources of geological uncertainty that feed into mineral resource and ore reserve estimates, with implications from pit to port. Case studies and a range of risk management strategies will be presented. This workshop is designed for geologists, engineers, metallurgists, and management staff at all levels.

Excellence in Mineral Resources Estimation

Brisbane: 4–8 May, 12–16 October
Presenters: Peter Stoker, Mark Berry, Alex Virsheff, Brian Hall, and other industry specialists

This five-day workshop provides geologists with a comprehensive review of all inputs into resource estimation, from data collection to reporting. Case studies are used extensively to illustrate and reinforce concepts. The workshop is presented by AMC principal consultants, supplemented by guest presentations covering topics such as sample preparation and analysis issues.

Institute News Snippets

CoalLog v2.0

A seminar to launch CoalLog v2.0 was held in Brisbane 11th March 2015. If you were unable to attend the seminar, a video of the presentations is now available on the AIG YouTube channel. Presentations outline the features in CoalLog v2.0, discuss its application and provide information on the changes between v2.0 and previous releases of the standard.

Further information regarding CoalLog including the CoalLog training manual, is available from the AUSIMM web site. The development of CoalLog v2.0 was supported by ACARP Project C22017.

Moral panic related to mineral development projects - Examples from Poland

Jaroslaw Badera Pawel Korcon

Highlights

• Local elites create mining-related panic as a tool in political games.
• The panic is characterised by a feedback loop between the protesters and the media.
• Negative effects include blackmail, false beliefs, double intellectual standards.
• More effective pro-social solutions in the mining sector are still needed.

To read more:
September 2015, Vol.45:29-36. doi:10.1016/j.resspol.2015.03.009
http://www.sciencedirect.com/science/journal/03014207/45

It’s official: geology rocks

A total of 95% of geologists in a poll of 220,000 students said they were happy with their degree. Why?

Read more at www.theguardian.com/education/2008/sep/11/geology.students?CMP=share_btn_tw
Mankind grossly unprepared for catastrophic volcano

For the full article and video, visit

$1.43 million in collaborative drilling grants to support exploration projects

Sixteen exploration projects will share more than $1.43 million in Queensland Government grants for targeted drilling projects to boost exploration throughout the state.

Minister for Natural Resources and Mines Dr Anthony Lynham said today the successful projects will target gold, copper-gold, base metals, graphite and phosphate in greenfield and brownfield areas of Queensland.

“The Palaszczuk Government supports the responsible and sustainable development of resource sector projects that will deliver jobs, regional development opportunities and ongoing economic benefits for Queensland,” he said.

“Nine of the 16 projects will be in North West Queensland which is globally recognised as a strong and competitive mineral producing region with high-quality copper, silver, lead, zinc, gold and phosphate deposits.

‘A further five projects are in north Queensland while the remaining two are in southern and south-west Queensland” (see map).

Dr Lynham said ongoing exploration is vital to unlock the resources that will support the mining projects and jobs of the future in the north-west and other areas of Queensland.

“That is why the government is providing funding to support the best drilling of new exploration targets through the Collaborative Drilling Initiative (CDI) of the $30 million Future Resources Program.

“A total 38 applications were received and independently assessed for CDI Round 9 with the 16 successful projects to share a total $1,431,275 in grants.

“The successful projects were chosen by the Geological Survey of Queensland and an independent panel for their innovative exploration proposals or location in under-explored areas of Queensland.

“Junior explorers in particular will benefit from these collaborative drilling grants which cover half the drilling costs (up to $150,000) of a project.

“These drilling projects provide the resources sector access to new and valuable information about Queensland’s mineral and energy potential to further stimulate ongoing exploration investment,” he said.

Since the Collaborative Drilling Initiative started in 2006, more than $5.99 million in government grants has been provided to 52 companies for 72 completed exploration projects.


India drift

MIT researchers explain mystery of India’s rapid move toward Eurasia 80 million years ago. Click here to read the full article
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VALMIN Code Review

Comments on the exposure draft of the revised VALMIN Code close on Friday 17 July 2015. All interested individuals and companies are invited to make a submission.

The draft revised Code has been prepared in response to changes in market conditions and practices over the last decade since the publication of the VALMIN Code 2005. The look and feel of the VALMIN Code 2015 exposure draft is different to the VALMIN Code 2005, some of the terminology is different, while the methods and key principles are essentially the same.

To review the exposure draft, and for instructions on how to make a submission to the VALMIN Committee at www.valmin.org/draft_2015.asp. Enquiries can be directed by contacting valmin.org.

Compliance with the VALMIN Code compliance by AIG members is mandatory. Interested members are urged to make a submission in order to help ensure that the code remains a practical and effective standard of best practice.

Recognition of REFLEX expertise and quality with industry endorsement

REFLEX announced this week the endorsement of REFLEX’s ioGAS and Applied Geochemistry training courses by the Australian Institute of Geoscientists (AIG). The endorsement is the first under a new AIG initiative of recognising providers of continued professional development opportunities for geoscientists, willing to submit their courses for review by the Institute. Click here to read the full article


Geotourism NSW map

Only $5 + postage just follow the link and order:

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Classroom Resources from Geoscience Australia

Geoscience Australia has unveiled a beta version of its Classroom Resources web portal, designed to provide access to educational resources produced by the agency.

Geoscience Australia produces teaching resources for primary and secondary levels. Resources include background information, student activities, full-colour cut-out 3D models and posters. For more information contact education@ga.gov.au or visit the classroom resources web page at www.ga.gov.au/education/classroom-resources

Brisbane History in Stone and Brick

The Geological Society of Australia Queensland Division, in conjunction with Global GBM has built a mobile app for a self-guided walking tour of the Brisbane CBD, highlighting a selection of significant buildings.

Click here to read the full article

All Your GEOPHYSICAL Needs

Geophysical Instrumentation
Manufacturer & Distributor
Lora Field Magnetics
Time Domain Electromagnetics
Magnetic Susceptibility Meter
Ground Penetrating Radar
Seismic Refraction / Reflection
Geological Surveying
Ground and Aquifer Mapping
Geophysical Interpretation Software
Rental Instrumentation
Equipment Repairs
Geophysical Consulting
Groundwater Resource Assessment
Borehole Logging
Mineral Exploration
Mine Development
Environmental
Civil Engineering
Archaeological Survey
Geochemical Consulting
Data Interpretation
Reporting

For the latest news, updates & events
aig.org.au

For the latest news, updates & events
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WA Branch Report

Suzy Urbaniak

The 2015 first quarter has indeed been busy providing value-adding opportunities for its members. In addition to the hugely successful MEGWA evenings, 2 seminars in collaboration with Geoscience Symposia were presented. Both Big Data and the much anticipated Yilgarn Retrospective were positively reviewed and enjoyed by its delegates. Contrastingly, the seminars delivered talks featuring future technologies and analytical practices as witnessed at Big Data compared to the Yilgarn Retrospective sessions which focused and included strategies, processes and cognitive skills that were implemented to develop Western Australia’s mineral’s industry in the Yilgarn since the 1960’s. Both abstract volumes are available on the AIG website.

Coming up, 2 one day seminars are scheduled for May and July. In a couple of weeks time, Proterozoic Terranes will be presented. Focusing on the development and mineralisation of Western Australia’s Proterozoic regions, highlight talks include Degrius and Tropicana. Our July seminar is tentatively titled “How do we sell exploration better? The value in exploration” and is in developmental phase. Thanks to Marcus and Matt respectively, for leading the organisation of these two events.

The WA NSS sub-committee have been busy developing its policies and format and excitingly we are awaiting its launch in July 2015. Sub-committee members, Heidi, Mike and Brett a cross section representation of our membership are aware of the educational needs of both mentees and mentors. Their collaboration and commitment to this much needed and important aspect will serve the continued representation of our membership are aware of the educational needs of both mentees and mentors.

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Education and community outreach is also evolving. Together with GSA, the annual Careers in Geoscience Evening is happening. Due to the current economic climate, there was a moment where the event was to be cancelled. However, it is during these countercyclical times where such events are most valued and required. A quick format rethink and new strategy implementations has seen a new look Careers where such events are most valued and required. A quick format rethink and new strategy implementations has seen a new look Careers where such events are most valued and required. A quick format rethink and new strategy implementations has seen a new look Careers where such events are most valued and required. The WA NGG sub-committee have been busy developing its policies and format and excitingly we are awaiting its launch in July 2015.

Sub-committee members, Heidi, Mike and Brett a cross section representation of our membership are aware of the educational needs of both mentees and mentors. Their collaboration and commitment to this much needed and important aspect will serve the continued development of Western Australian Members.

Kent Street - The Yilgarn Craton Field Trip and Kent Street ‘Rocks the Land of Fire, Ice & Vikings - Iceland & Norway 2015

The beginning of 2015 has seen Kent Street Earth and Environmental Science students engaged in 2 remarkable field trips. In early March, the Year 12 group spent 6 days traveling the Yilgarn Craton visiting both the Evolution’s Edna May Gold Mine and Western Areas Flying Fox and Spotted Quoll Mines understanding the relationships between the greenstone belts, mineralisation, their structures and the geochemical and geophysical techniques used to analyse and interpret the geology. A field trip based on deep earth processes, the Yilgarn granites were studied at Wave Rock and Mulkika’s Cave. Mulkika’s Cave and The Humps was a new addition this year and we were all taken by the +400 Aboriginal hand stencils and prints and drawings that occur here, one of Australia’s largest Aboriginal Cave locations. The younger Albany Fraser Orogency and its medium grade metamorphics at Fitzgerald River National Park - A World Biodiversity Hot Spot proved to be a highlight. To observe staurolite, garnet and kyanite in rock, the concept of ‘facies’ became clearer and relevant.

Four weeks later, a group of 16, including 3 Curtin University geology students (former students) experienced the geological wonders of Iceland and Norway. Just about 100% outcrop in both places and ‘fresh’, even the ~1 billion year old Anorthosites in Rogaland, Norway. It is difficult to put into words the geological marvel that we studied. Each stop was better that the last, the geology was different at each location and consequently the landscape it supports was just as contrasting. We stood where the Mid Atlantic Ridge beaches onto land, we snorkeled through the rift, climbed its basaltic cliffs, chased dykes and sills, studied pillows and columns of all sizes and shapes, we examined ignimbrites, rhyolites, porphyritic and picritic basalts, there was Aa’aa and pahoehoe, marvelled at the infamous Laki Lava field and the world’s largest pseudo crater site, not to forget the ‘Dark City’ near Myvatn. Some 10 different waterfall sites were examined, as was the Eyjafjallajökull Glacier and its outlet glacier, undertook glacier hiking and stood in awe as we understood the erosive power of these features and the landscape they produce. So many other aspects including zonolites, geothermal power and pools, Iceland Spar, norites, anorthosites, trocolites and 100% ilmenite sills near Norway’s Titania Mine and my favourite the Krafla Fires and Crater Row.

The list is endless, the experience will never be forgotten, nor will the authentic learning. The only thing we missed was a volcanic eruption, we were also privileged to observe Aurora Borealis, otherwise known as ‘The Northern Lights.’ If you haven’t been to Iceland or Norway as a geologist, I strongly recommend it as a bucket list item.

Thank you to AIG, Evolution, Western Areas, EISWA, Extreme Iceland and Magma Geopark, Norway for these extraordinary geoscience experiences.

AURORA BOREALIS - THE NORTHERN LIGHTS - Icelands most famous phenomenom.
The NSW Branch of the AIG is active in organising events during the year. These include one day seminars, student information nights and the fabulous bi-annual Mines and Wines Conference, as well as joint events with other societies.

The NSW Branch hosted a student careers night on the 7th May at Wollongong University. Bret Ferris spoke about different career options open to students when they graduate. Katarina David spoke about what a career in hydrogeology is like and why it’s important and Verity Borthwick gave a presentation about the path a career in minerals exploration might take and what the lifestyle is like. After the talks the students and speakers mingled over beer and pizza, with plenty of discussion and questions, and lots of sign-ups for student membership by the end.

The NSW branch has a number of workshops that are in the organising phase including: a two day Geochemistry course to be run by Dave Cohen and Neil Rutherford at the University of NSW; career organising phase including: a two day Geochemistry course to be run by the end.

The NSW Branch of the AIG is active in organising events during the conference. The posters will be judged on content and presentation, and winners will be presented with a prize. Student registration is also heavily discounted to $150.


AIG NSW has a close association with SMEDG (Sydney Mineral Exploration Discussion Group). SMEDG meetings are held on the last Thursday of the month at the Rugby Club. Gatherings are very informal with a free bar at the beginning, an interesting speaker and often dinner afterwards. For more details visit the SMEDG site www.smedg.org.au and scroll down to “Join the SMEDG mailing list” to register for your free membership. You will then receive an email once a month reminding you of the meeting and the topic. If you’re interested in giving a talk about mineral exploration please get in touch with the committee members (you can find their details on the SMEDG web site).

SMEDG also hosts harbour cruises twice a year, which are always great events and an excellent opportunity to catch up with old friends and network. The next one is coming up in July, so make sure to keep an eye on the SMEDG website for details on the date and registration.

NSW AIG provides funding support for young and unemployed geoscientists. Limited funding is available to provide NSW-based AIG members with opportunities to participate in professionally organised geological field trips, conferences and courses (see the AIG web site under the Education tab, NSW AIG Support Fund).

The branch committee continues to assist in the assessment of applicants from NSW, seeking Registered Professional Geoscientist status with the AIG.

The NSW branch committee meets every two months in Sydney – visitors, guests, members and potential committee members are always welcome.
AIG News Issue 120 - May 2015

AIG Bursary Sponsors – May 2015

The AIG wishes to thank the following individuals and organisations for their support of the Geoscience Student Bursary Program.

DIAMOND

• CHRISS BONWICK
Sponsoring the Bonwick-AIG Geoscience Student Bursaries

• GEOFF DAVIS
Sponsoring the Davis-AIG Geoscience Student Bursaries

• MACQUARIE ARC CONFERENCE – GEOLOGICAL SURVEY NSW
Sponsoring the Macquarie Arc Conference-AIG Geoscience Student Bursaries

• SYDNEY MINERAL EXPLORATION DISCUSSION GROUP
Sponsoring the SMEDG-AIG Geoscience Student Bursaries

PLATINUM

• AIG STATE BRANCHES
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Sponsoring the Alexander Research-AIG Geoscience Student Bursary

• SA DEPARTMENT OF STATE DEVELOPMENT (DSD)
Sponsoring the DSD-AIG Geoscience Student Bursary

GOLD

• GNOMIC EXPLORATION SERVICES PTY LTD
• TERRA SEARCH PTY LTD

SILVER

• CRYPTODOME PTY LTD

BRONZE

• DOUG YOUNG

For more information on the Student Bursary Programme visit www.aig.org.au/education-training/student-bursary-programme

Membership Update

We welcome all new members to the AIG

NEW/UPGRADES FEBRUARY 2015

STUDENTS
SPARKS Darren James
FELLOWS
VIGAN Andrew James
MEMBERS
BERWILL Rodney William
BOWDEN Asmat
BRYANS Christopher
CHEMILLAC Fanny
DARAJY Aisan
DARAFI Nagh Shofar
DANANGRI Inayatullah
DE PAOLI Angela
DURZEK Emily
EDMONDS Samuel
Trevor
EZZY Timothy Robert
FREW Maxwell
Flex
GURU Ashutosh Indra
HAWKE Margaret Louise
HINDZE James Steven
KANEKAR Venkatesh
LEAHY Trevor Allen
MARSHALL Derek Edwin
MATUS Catherine
MAXWELL Lauren Ann
MICHELENE Russell
MOUNTOCK David
MOUROU Abdelaziz
MURU David John
NEWSGARD Andrew
NEWTON Philip Gregory Nagint
PENA Alberto
RAZVI Zameer
ROBBIE Eric Dean
ROSSAGRO Christopher Martin
SALEEM Ahmad
SAMIHAJU Myar Jayant
SMADOGO Francois Jamvier
SMIRHANITE Anthony John
STUFF Rub
TELFER Andrew
TIDBALL Michael William
VARLEY Raymond John
WINTERBOTTOM Stephen John

NEW/UPGRADES MARCH 2015

STUDENTS
PHILLIPA Elizabeth

GRADUATE
BURLEY Lauren Louise
DOWES Aaron Joshua
FULLELOVE Dakam Andrew
MIKTUIK Devon
TODHARM Leith Fabry
WALL Thomas
WONG Christopher Charity

MEMBERS
AMES Caleb
BAGGOTT Matthew Spencer
BEVERLEY Peter John
BOGDANSKY James Samuel
EVANS Thomas Philip
HEALY Bryce
HD Tommy Njik Kong
LAMB Tyler Jay
MABON Ad
ROBERTS David Lloyd
TURNBULL Catherine Watson
WALLIN Marc
XU Mingzuan
YANG Liyan

Membership News

We welcome all new members to the AIG

NEW CANDIDATES APPROVED BY AIG COUNCIL IN MARCH 2015
MR MARTIN HAYLETT of Sulawesi, is seeking registration in Mining and Mineral Exploration

NEW CANDIDATES PUBLISHED FOR PEER REVIEW BY THE MEMBERS OF THE AIG
MR SERGEY VOLKOV of Almaty, Kazakhstan, is seeking registration in Mining and Mineral Exploration
MR NEIL HANNAWAY of Bedford, WA, is seeking registration in Mineral Exploration
MR MARK PIROLD of Brisbane, QLD, is seeking registration in Geochemistry and Mineral Exploration
MR PETER CARISTO, The Gap, QLD, is seeking registration in Mineral Exploration
MR ROBERT SMILLIE of Dungun, NZ, is seeking registration in Mineral Exploration

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PAS portable analytical solutions

Mr. Robert Silkz

Mr. Mark Millie

Mr. Peter Caristo

Mr. John Martin

Mr. Neil Hannaway

Mr. Martin Haylett

Mr. Martin Haylett

Mr. Robert Smith
Seven Wonders of the Hydrogeological World (in Australia)

In an effort to raise the national profile of hydrogeology, the Australian branch of the International Association of Hydrogeologists (IAH Australia) launched a competition in 2010, challenging interested parties to nominate Seven Wonders of the Hydrogeological World (in Australia).

With a $1000 cash prize on offer for the best submission, entries were impressive, varied and reflective of the diverse and abundant hydrogeological wonders Australia has to offer. Submissions were assessed on the basis of scientific merit, interest to scientific community, interest to scientific media, visual amenity, quality of submission, basis of scientific merit, interest to scientific community, and reflective of the diverse and abundant hydrogeological wonders Australia has to offer.

Over coming issues of the AIG News, we will be featuring each of these wonders, starting with number 7 Gins Leap Gap Wonder: Upper Namoi Valley, NSW, Australia.

**7: Gins Leap Gap**

Hydrogeological Wonder: Upper Namoi Valley, NSW, Australia

Ken Crawford
Principal Consultant, KLC Environmental Pty Ltd

Reproduced with thanks to the International Association of Hydrogeologists, Australia National Chapter

Coming to Gunnedah as a young Soil Conservationist in the early seventies, I became fascinated with The Gap. I soon realised that surface water, at this narrow point in the valley, became dammed up in flood times. There had been three floods by 1976 and I soon developed a passion to learn more about the hydrogeology of this place they call The Gap.

The Gins Leap Gap is located approximately 9 Km north of Boggabri on the Kamilaroi Highway in New South Wales. The major tributaries of the Namoi River, including Cox’s Creek, the Mooki, Peel, Cockburn, Manilla and McDonald rivers all flow through The Gap as well as the groundwater associated with the unconsolidated sediments of the alluvial aquifer. The Namoi CMA Gins Leap Gap Project revealed some surprises and geological problems that make me wonder at the features of the underground landscape.

I marvel that so many geological controls of the bedrock topography exist in this one place. I often wonder about its geological history and stories the rocks could tell. Imagine: The Boggabri Thrust Fault predetermining the path of the Namoi River or even perhaps an earlier valley glacier. The paleochannel sides are very steep and the two ridges may have been pushed up as the valley glacier terminated at this point. This is could well be the toe of a Tertiary glacier.

Dr David Allen of Groundwater Imaging produced an image using Google Earth Professional (see Plate2). The polished rock or drop stones along its length typical of a valley glacier. The infilling in later Tertiary times provided large boulders and cobbles from a high energy, fluvial environment. A Drillers nightmare! Jurassic and Tertiary intrusions also complicate the picture, however the geophysical survey discovered an inferred lava flow (see Plate 3). Drilling control confirmed this. Notice that the lava flows over the earlier alluvial sediments post dating them. This is a recent lava flow, geologically speaking, and caused further damming of the Namoi River. The lava flow may have originated from the Mount Kaputar volcano.

Think about it! Depth to bedrock is only 27 meters to 37 meters below ground level on the rocks appear to have been carried along and dumped. These boulder rocks or drop stones are Permian conglomerates and are strikingly different to the volcanic bedrock ridges suggesting a glacial origin.

The longitudinal profile of the valley bedrock make me wonder at the features of the groundwater. The Namoi CMA Gins Leap Gap Project revealed some surprises and geological problems that make me wonder at the features of the underground landscape.

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In Situ Fe isotope analyses by SIMS

The project aims

1. to cross calibrate the instrumental mass fractionation of the ion probe by comparing the Fe isotope measurements of the sulphide standards measured using SIMS to measurements made using solution Multicollector Inductively Coupled Plasma Mass Spectrometry (MC_ICPMS) at the University of Adelaide.
2. to measure in-situ δ34S and δ56Fe of natural sulphide samples from the Renison tin deposit using SIMS and compare the results to published data that had been measured by other methods.

How does SIMS work?

In general, SIMS instruments generate a primary beam of ions, which are directed to the sample, under vacuum. The interaction of the primary ion beam with the sample provides sufficient energy to ionize elements present in the sample. These are called the secondary ions. The secondary ions are then accelerated, focused, and analysed by a mass spectrometer. A more detailed explanation of how SIMS works can be found at www.serc.carleton.edu/research_education/geochemsheets/techniques/SIMS.html

Chris Wawryk
PhD candidate,
School of Physical Sciences at University of Adelaide
2013 AIG Postgraduate Bursary Winner

Wawryk received a Student Bursary from the AIG to travel to Perth to work with Assistant Professor John Cliff at the Centre for Materials, Characterisation and Analysis at the University of Western Australia in October, 2014. John has developed internal sulphide standards for in-situ iron and sulphur isotope analysis via Secondary Ion Mass Spectrometry (SIMS), using a Cameca IMS 1280 ion probe. The aim of our work was two-fold:

1. to cross calibrate the instrumental mass fractionation of the ion probe by comparing the Fe isotope measurements of the sulphide standards measured using SIMS to measurements made using solution Multicollector Inductively Coupled Plasma Mass Spectrometry (MC_ICPMS) at the University of Adelaide.
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In Situ Fe isotope Analyses

Advantages of the ion probe

SIMS has two advantages over solution Multi-collector ICP-MS, one of which is that no corrosive acids are required in sample preparation, and the preparation is much quicker. We measured our samples directly as grain mounts drilled from thin sections (Fig. 1). Four mounts, with 5 samples and the standards on each mount, took about 6 hours to prepare. The grain mounts were set overnight in an epoxy resin, then highly polished and coated with gold (Fig 1). The gold coating is necessary to prevent a charge build-up on the sample surface.

A second advantage is the very high spatial resolution of samples; we used a primary ion beam of ~40µm width, so we were able to measure isotopes across alteration zones in pyrrhotites, and across mineral grain contacts (Figure 2), and avoid inclusions in the sulphides. This technique would have been extremely useful for the porphyry style samples I am working on; in one core sample an earlier chalcopyrite-bornite centreline assemblage in a quartz vein is cross cut by orthogonal tension cracks filled with chalcopyrite. I could not separate these 2 stages of chalcopyrite deposition using grinding, so that particular core sample could not be used.

Limitations of the ion probe

A limitation of SIMS, apart from the high cost of the instrumentation, is that quantitative isotopic ratios must be calculated by comparing measurements of the samples to well characterized standards; but as instrumental mass fractionation is different for each mineral, there must be a separate standard for each mineral. Standards for some minerals cannot be made owing to crystallographic or matrix effects; solid solutions and non-ideal stoichiometries can also render it difficult to create standards for some minerals, for example bornite. So solution and laser ablation systems will be used for some time yet!
In Situ Fe isotope Analyses

Results

The IMS 1280 ion probe at CMCA ran well during my visit, and we obtained δ34S and δ56Fe for pyrite, pyrrhotite, chalcopyrite and arsenopyrite from massive pyrrhotite replacement ore and quartz-vein hosted fault ore from the Renison tin mine. The preliminary δ34S data matches published data (Patterson et al., 1981; Kitto, 1994) extremely well, as shown in Figure 3. The preliminary δ56Fe data match the solution data very well (Wawryk and Foden 2014), and after final processing we will be writing up the results as a journal article.

The most exciting application for me, as an economic geology researcher, is how quickly samples can be prepared and data acquired for the common sulphides pyrite, pyrrhotite, chalcopyrite and pentlandite. For sulphides hosted in quartz veins, measurement for sulphur, iron and oxygen isotope data could be acquired from one sample, in one pass of sample preparation.

Acknowledgments

I thank the AIG for awarding the student bursary which funded this project, and John Cliff for teaching me the sample preparation and running the Cameca IMS1280. The Bluestone Tin JV and the geologists at Renison Tin mine provided access to the core library to collect samples for my PhD research.

Figure 3. Comparison of δ34S results for pyrite, pyrrhotite and chalcopyrite using the IMS1280 ion probe, with previously published data.

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Patterson, D.J., Ohmoto, H. and Solomon, M., 1981 Geologic setting and genesis of cassiterite-sulfide mineralization at Patterson Bell, Western Tasmania. Econ. Geol., 76, 393-438.


The Spirit of Ecstasy replaced with a Workhorse

Diana Titren
Manager Training and Marketing Optiro

With the mining boom coming to an end, we are facing commodity price shrinking, no longer is it an issue of how much material we drive through our mine gates but rather how efficiently we drive it to the gates.

The mining industry has implemented all of the standard short-term and obvious cost saving measures of slashing staff, deferring projects, mothballing equipment, freezing budgets, placing declines on hold and sending drill rigs packing - while pushing for profits through increased productivity. So, with nothing left to trim, we now need to look at increasing the efficiency of our processes and people by putting that elusive best-practice, back into practice. But in these lean times we cannot afford the leather-seated Spirit of Ecstasy emblazoned Rolls Royce version of best-practice, but rather the less expensive, equally effective and reliable Workhorse that bears the emblem, The Spirit of Efficiency.

So, how do we drive the Workhorse? We need Strategies – to define what we want, plan where we are going and a programme to implement the strategies. We need to open the bonnet and look at the processes – we need to standardise, audit and monitor our processes. To get peak performance from the Workhorse – we need to record, monitor and review the Equipment. And of course, the part most critical to the success of the Workhorse, is the driver. We need experienced, knowledgeable, skilful People – not only to steer the Workhorse efficiently and effectively over the bumpy road ahead, but to also pass on their knowledge and skills to the younger folk... to prepare them for the next inevitable downturn!

The Workhorse unfortunately can’t liberate us from the current downturn, but The Spirit of Efficiency will boost our profit margins and send us into the next upturn!

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The Workhorse unfortunately can’t liberate us from the current downturn, but The Spirit of Efficiency will boost our profit margins and send us into the next upturn!
Uncorking the Tasmanides
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For details visit www.minesandwines.com.au

For more information visit www.aig.org.au/events

June 8 - 9
Water Management for Shale and Tight Gas Resources

This 2 day technical seminar will engage and educate water and petroleum professionals about the emerging Shale and Tight Gas sectors. One & Two Day registrations, program, and more information available at


For more information visit www.aig.org.au/events

VALUE CREATION IN EXPLORATION
A one-day seminar organised by AIG Western Australia Branch
July 13, 2015


Friday 5th June
New England Orogen: Geology, Tectonics, Economics
Saturday 6th June - Sunday 8th June
New England Field Conference

The New England Orogen, the most eastern part of the continent is a fertile section of NSW and Qld for a variety of mineral deposits, offering far and precious metals in building stones and industrial minerals. Significant advances in the understanding of the Orogen have been made in recent times and the seminar will serve to present an up-to-date view of the knowledge. Speakers are drawn from a variety of industry, government, academic, and consulting organisations to provide information exchange and raise awareness of pressure and stress environments in the region. The seminar will be followed by a three day Field Conference to the southern Queensland and northern NSW parts of the New England Orogen, highlighting its minerals and industrial potential in the region.

For more information visit www.aig.org.au/events

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FURTHER INFORMATION:
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July 2015

For more information visit www.aig.org.au/events

Applied Geochemistry
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June 23 - June 24, Balcatta, Perth

Further information: www.reflexnow.com/events/applied-geochemistry-course/

ioGAS Advanced Techniques
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10 June, Balcatta, Perth
Includes map-based visualisation; multivariate plots; outlier detection; robust regression and residuals; clustering; principal components analysis; discriminant projection analysis and the new version of M-distance auto classification functions.

Further information www.reflexnow.com/events/iogas-advanced-techniques/

2015 Queensland Exploration Council Breakfast
June 16, Plaza Terrace Room, Brisbane Convention and Exhibition Centre, Grey Street, South Brisbane.

RSVP by Wednesday 10 June 2015
For more information contact Louise Stubblefield at loutse@qrc.org.au

Saying Goodbye to a 2D Earth
2-7 August, 2015

The CET and partner organisations (CSIRO, RWTH Aachen University, IWA and Geological Survey of WA) have come together to host the international conference, “Saying Goodbye to a 2D Earth”. We invite you to download the FIRST CIRCULAR (www.cet.edu.au/docs/default-source/events/first-circular_v1.pdf?sfvrsn=2) for more information and contact details.

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Further information www.creflex.com/events/applied-geochemistry/

AIG NEWS Issue 120 · May 2015

AIG NEWS Issue 120 · May 2015
Forensic down-the-hole geology in search of gold

Donald YATES
BAppSc BCommEng CertRenewEgy
CEO, Columbus Group R&D

The typical story so far …

Defining a resource usually requires a close spacing drilling program to achieve results with reasonable confidence, particularly if the grade is variable within the deposit, a situation often experienced in underground gold prospects. And then the drilling data is trimmed to remove the extra high indications to produce what is regarded as a more realistic geological grade report of the anomalies.

As for the applied traditional drilling hardware, the choices are usually a balance of reliable data verses cost. Diamond drilling does produce a lot of geological information with almost no contamination, but can be slow and expensive. It is often reserved for holes greater than 300m deep.

The usually more popular drilling system is reverse circulation, and what it gains in speed and lower cost, it loses in accuracy.

And the typical least cost is percussion rotary air blast drilling. It is good for drilling lots of holes up to 30m deep, quite fast, but cross contamination is a serious issue, as is groundwater if encountered where the produced fine dust can become a clogging mud very quickly.

In contrast, the regular spaced drilling programs with 3D ‘join the dots’ modelling, particularly in gold exploration, quite often can produce ‘phantom’ reserves that are not there because they are not continuous, and then miss other potentially profitable veins which are too narrow to be picked up and defined.

And what of the immediate future

In October 2014, the Australian Mining Prospect Awards for innovative mining solutions was won by the 3D down-the-hole high water pressure drilling system.

While designed to produce smart shaped holes for improved explosive effort, holes with cavities for safer rockbolting and even an environmentally better shale oil and gas alternative to fracking, the technology has been optimised for 3D forensic down-the-hole geology.

The 3D drilling hardware uses the delivered medium pressure water and separate grit supply to dramatically increase the pressure and composition of the cutting fluid delivery to the water hammer head package, so producing tetrahedral chip fragments in a slush, a good penetration rate and steerable direction control under the internal software control in partnership with the surface overall monitoring management.

Before the drilling waste chip and slush are pumped up and away from the drilling head, an appropriate fraction is passed through an optimised hyper spectral image (HMI) analyser built into the drill housing for immediate assay determination of the cut away materials, together with the precise 3D underground positioning obtained from the onboard pseudolite navigation system.

The instant position can also be physically scripted onto a sampling of the tetrahedral chips within the drill housing before being pumped to the surface through the tri-axial coax connection. This allows traditional assaying / observation to take place if wanted with known 3D referencing for cross comparison with the HMI data for extra results reliability.

In the world of Big Data, it is one thing to collect information, but another is the immediate and useful application of the assay results obtained. The inhouse CYAEIP software package in the drill has been focused to forensically chase and more clearly define underground discoveries, allowing twisting and turning, with vertical and horizontal drilling directions, automatically enhancing the skills of experienced drillers and doing the ‘impossible’.
AIG NEWS Issue 120 · May 2015

**Geological mapping procedures for Porphyry Cu-Au and Epithermal Exploration**

I was fortunate enough to attend this course due to a bursary made available by the AIG (NSW branch), to whom I am most grateful for the opportunity to learn from a company that is highly regarded within the industry.

The course was a wonderful opportunity for a student to experience working with globally experienced geologists, to gain new insights into porphyry exploration techniques.

The science surrounding porphyry genesis interpretation - and therefore exploration strategies, is continually evolving, something that the presenters, Greg Corbett, Doug Menzies and Stuart Hayward, stress throughout the six-day course. As a consequence, while there are several extremely large, and also many smaller porphyry deposits globally, there is no single classic porphyry deposit style, or exploration paradigm with which to use as a guide to exploring for potential new deposits. In fact, complexity is the key to understanding porphyry mineralisation.

Porphyry mineralisation is generally the result of polyphase retrograde and prograde alteration in hydrothermal regimes utilising both magmatic and meteoric waters in processes involving multiphase intrusions, typically involving uplift and erosion. In brief, building on the Terry Leach legacy, the CMC approach is to use rock textures, zones of alteration and stockwork (sheeted) vein style classification (A, M, B, C, D, breccia) as vectors for targeting mineral exploration.

Anything but a deposit tour, the course had a practical focus with a global perspective.

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Semper Sursum
... by the end of the course I was reasonably confident I’d be able to play the ‘pin the sample on the deposit’ game.”

Lectures and talks continued in the evenings from guest speakers on deposits such as Oyu Tolgoi and Wafi-Golpu and locally, North Parkes. The evenings were also used to review the day’s work and to prepare for the next day’s activities. The days were spent onsite, either mapping in pits at Cargo and Copper Hill, or logging core at Copper Hill, Cadia or North Parkes. Arriving on the first day and seeing 120 rock samples of many descriptions from various low-high sulphidation epithermal and porphyry deposits laid out on the tables at the back of the conference room was a little daunting, but by the end of the course I was reasonably confident I’d be able to play the ‘pin the sample on the deposit’ game. The idea is to locate the samples in time and space on the basis of alteration and vein styles, on the Corbett diagram of staged porphyry Cu-Au evolution that is used as a basis from which to analyse a deposit. A lot of deposits were also examined from a 3D perspective, which is an ideal format to display mineralisation occurring as ‘shells’ in a deposit space. Orange was a convenient location for the course, as it affords access to several Macquarie Arc deposits - many of which CMC suggest, have a diatational genesis within a pull-apart basin resulting from oblique subduction in the Ordovician. Day two saw us at the Cargo site with mapping-tape and compass, just to get the feel of using the abridged Anaconda technique, which dispenses with many formal geological mapping annotations, and uses thematic colours to indicate zones of alteration in terms of mineralogy, textures, vein style and direction. We did a similar exercise at Copper Hill the following day, also logging drill core in the afternoon. Later during the week, we were fortunate to be allowed access to Cadia Valley and North Parkes drill core, and while onsite at North Parkes, we were treated to a very professional overview by the Project Exploration Geologist - Jonathan Hovey. From the perspective of a student about to graduate in a time when opportunities for postgraduates within the industry are scarce, the information gained from attending this course was insightful. Not just from the formal lectures and tasks, but also from gaining insights into the day-to-day complexities involved in carrying out exploration from workers employed in both small and large companies. It is courses such as this that go some way towards bridging the gap between traditional Geology/Geoscience degrees, and the industry environment. For various reasons, theory and practice sometimes fail to converge. For example, the mantra of ‘digging early and digging deep’ is fine if the budget allows for it. To a great extent, the market-or purse strings define the exploration strategy. Highly recommended.

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PNG MINERAL RESOURCES AUTHORITY (MRA) PROJECT

As part of the World Bank sponsored 2nd Mining Sector Institutional Strengthening Technical Assistance Project (MISSTAP) in PNG, Terra Search has commenced a 12 month contract designed to add significant further historical data to the over 450,000 data points already captured by Terra Search during the 1st MISSTAP in 2002-2005. With over 15 years of experience providing database services to government and industry, Terra Search is well placed to deliver the best possible outcome for the MRA. All data compiled and validated during this project will be made available globally to exploration companies through the MRA.

INTRUSION-RELATED MINERALIZATION SYSTEMS IN NE QLD

Terra Search and Edelweiss Exploration Services are undertaking a comprehensive study of the geology and metallogeny of gold-bearing magmatic-hydrothermal systems incorporating:

- A new metallogenic database of the Charters Towers Region, GIS data package and map.
- Metallogenic model documenting genetic types & spatial controls in Charters Towers region.
- Revision and update of the geology of the Charters Towers District.
- Templates of geophysical & geochemical signatures of deposit styles.

This study is a part of a North QLD research initiative in collaboration with local industry, EGRU (James Cook University) and the Geological Survey of QLD, funded through the Queensland Government Future Resources Program.

Current Major Collaborative Projects in 2014

Participants in the CMCGeos Porphyry mapping course log core at CMDC North Parkes mine core shed. February-March, 2015.
Kaylene Camuti

INTRAw is a three-year international research project on raw materials. The project is funded by the European Union (EU) and was launched in February this year. Australia is represented in the INTRAw project by the Australian Academy of Technological Sciences and Engineering (ATSE www.atse.org.au), which is a partner in the INTRAw consortium, and by the AIG, which is a third party partner in the project. In its role as a third party partner the AIG will assist in disseminating information so that AIG members and the wider geoscience and resources communities are aware of the project and its outcomes.

The INTRAw project aims to map best practices and develop new cooperation opportunities related to raw materials between the EU and technologically advanced countries. The project will address:

- Research and innovation;
- Raw materials policies and strategies;
- Joint educational and skills programmes;
- Licensing and permitting procedures, royalties and tax policies;
- Data reporting systems;
- Exploration, extraction, processing and recycling practices;

The project is coordinated by the European Federation of Geologists (EFG) and brings together an international consortium of 15 partners with extensive experience in research, innovation, education, industry, trade and international networking across the entire raw materials value chain. The project partners will be actively supported by three Panels of Experts on “Research & Innovation”, “Education & Outreach” and “Industry & Trade”.

Through the EFG’s third parties – who represent the members of professional geosciences organisations in 18 European countries, the USA, Australia, South Africa and Canada – a broad global network of geoscientists will further enhance the project.

In the first two years of the project activities will include mapping best practices and knowledge transfer. The outcomes of these activities will be used as a baseline to set up and launch the European Union’s International Observatory for Raw Materials as a knowledge management infrastructure. The Observatory will be a permanent international body that will remain operational after the end of the project, and will aim to establish and maintain strong long-term relationships with the world’s key players in raw materials technology and scientific developments.

Further information on the project is available from the INTRAw web site, and on the AIG web site at www.aig.org.au/intra-w-a-new-international-project-on-raw-materials. The AIG will keep members informed as the project develops, via reports in AIG News and the AIG web site.

Andrew Waltho
Chairman, AIG Complaints Committee

What sort of complaints does AIG deal with regarding members’ conduct?

The types of complaints dealt with by AIG’s Complaints, and Ethics & Standards Committees and the number of complaints dealt with are probably the two most frequent questions asked about the complaints and ethics and standards process.

It’s worth pointing out that all complaints received by AIG are dealt with in accordance with the Institute’s complaints process, the workflow for which is explained by the diagram below that is also published on the AIG web site.

www.intraw.eu
Both the Complaints, and Ethics & Standards Committees attempt to deal with issues before them in a prompt manner, but the time required to complete processing of any complaint depends on the complexity and gravity of each case.

There are typically between one and three complaints under investigation by the Complaints Committee at any point in time.

Many members I’ve told this are surprised by the number of complaints received by the committee and express surprise that there is not broader knowledge of this amongst members. This is actually a very positive sign that the committees are working effectively.

To be fair to both complainants and those members against whom a complaint has been made, the processes need to be conducted in confidence. Where there is no case to answer, the subject of the complaint and the complainant are informed of the outcome. Where there is an adverse finding, however, the outcomes of the investigation and rulings are published. There hasn’t been an adverse finding warranting publication for some time, hence the low profile of the Complaints, and Ethics & Standards Committees.

Under this process, all complaints are investigated by the Complaints Committee which determines whether there are grounds for referring the complaint to the Ethics and Standards Committee for a ruling on the issue. The purpose of the two-committee process is to ensure procedural fairness for the subject of the complaint. The Complaints, and Ethics & Standards Committees have completely separate membership. Members who do not agree with Ethics & Standards Committee findings have the option of appealing any decision to the Institute’s Council, where any Councillors previously involved in the matter during the Complaints and Ethics & Standards processes do not participate in reaching any appeal decision.

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Complaints cover any aspect of professional practice. At their core, the subjects of complaints can be classified as:

- Professional Misconduct
- Incompetence, and,
- Negligence.

Professional misconduct is elegantly described by Andrews (2014) as “any conduct detrimental to the interests of the public”, that “harms or tends to harm the standing of the profession generally” or “would reasonably be considered disgraceful, dishonourable or unprofessional”. AIG’s Code of Ethics (www.aig.org.au/about-aig/geoscience-news/code-of-ethics) provides more specific guidance that supports these very general principles.

In the past, AIG has dealt with complaints regarding alleged:

- unethical treatment of a member by another, which covers a range of issues including plagiarism and engaging in conduct that unfairly tarnishes a member’s professional standing or reputation;
- unethical treatment of a member by an employer (who may or may not be a member of AIG);
- failure to comply with the JORC or VALMIN Codes (which is mandatory for all AIG members); and,
- poor professional practice, such as failing to complete work that a member has been contracted to undertake, or failure to deliver work of a standard commensurate with the member’s experience or contract terms.

Complaints associated with JORC compliance probably account for between one half and two thirds of the Complaints Committee’s work and, in recent times, have been focussed on the ability of members to act as Competent Persons as defined by JORC, i.e. meeting the commodity experience requirements. The remaining third of complaints cover a diverse range of issues in which the treatment of members by employers feature. These are, possibly, the most complex issues dealt with by the Complainants, Ethics & Standards Committees as there are frequently situations where laws and government regulations come into consideration. Legal advice may be needed, and is sought where required, to help resolve issues of this nature.

Who Can Make a Complaint?

Any individual or corporation can make a complaint regarding the actions of an AIG member. All written complaints, clearly outlining the basis for considering the conduct of a member to be unsatisfactory, initiate a complaints process.

Does AIG monitor the conduct of members?

AIG expects members to comply with the Institute’s Code of Ethics at all times. The Institute is not, generally, in a position to monitor the conduct of members and expects members to honour their obligation, set out in the Code of Ethics, to make the Institute aware of instances where the conduct of others may be in breach of the Code. The exception to this relates to JORC and VALMIN where there is a process of random review of announcements in which members are nominated as Competent Persons. This process at times reveals a statement by a company that is considered not to comply with either code. The Complaints Committee, in these instances, may itself initiate a complaint against a member, or make a complaint on behalf of the Institute to another body. There have been several instances in the last year where AIG has referred the compliance of companies with the JORC Code to the Australian Securities Exchange (ASX) for investigation that have involved alleged inappropriate use of information provided by Competent Persons, or failure to nominate a Competent Person in releases providing exploration results, mineral resource and ore reserve information.

There have also been instances where AIG has referred an alleged issue with the conduct of a Competent Person to AusIMM, where the individual is not an AIG member but believes there are grounds for the conduct of the Competent Person to be investigated. AIG investigates all issues involving AIG members. There are situations, most frequently associated with JORC Code compliance, where AIG members who are also AusIMM members may be investigated independently by both Institutes (and vice-versa).
The AIG along with Geoscientists Symposia (organisers) presented the Yilgarn Retrospective, on March 30-31 in Perth. The event celebrated the period 1950-1999 which saw WA transform from a small agrarian economy into a world leader in mineral exports, much of that mineral wealth sourced from the Yilgarn Craton.

The most common quip in the social sessions was “It’s a bit of a WMC love-in”. Fittingly, the first speaker was Roy Woodall, the legendary former exploration manager of Western Mining Corp., arguably the most successful explorer in the Yilgarn. While Roy stated that what really mattered was applied science and a Board who backed their scientists; I think Roy’s relentless recruitment of the best geoscientists he could find was the real secret of WMC’s success. Roy noted he spent up to one third of his time visiting geoscience institutions, interviewing and hiring graduates in a time when WMC had no HR department. As testament to Roy’s recruitment skills, at least half the speakers began their careers with WMC, contributing to the discovery of 3 major camps; Darling Range bauxite, Kambalda nickel, and Yeerlirrie uranium.

These commercial successes helped spawn research yielding new deposit models, a new appreciation of the regolith that blankets the Yilgarn and the tools to work beneath that regolith. Attendees were treated to 23 presentations by industry explorers, academia and government that documented this “golden” era. An extended abstracts volume is available through the member’s portal on the AIG website.

Non-compliance with the Code of Ethics has potential to undermine the standing and perception of our profession and this is at the core of our profession’s ability to undertake meaningful self-regulation.

Members are able to seek an opinion or advice on issues that they feel may represent non-compliance with AIG’s Code of Ethics from the Complaints Committee, which is provided in confidence.

REFERENCES

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Members’ Obligations

Two obligations apply to all AIG members, irrespective of their grade of membership:

1. Members have an obligation to report conduct by another member that they believe may not comply with the Institute’s Code of Ethics.
2. Members are required to fully cooperate with any Complaints or Ethics and Standards investigation in which they may become involved.

Need Advice?

Members are able to seek an opinion or advice on issues that they feel may represent non-compliance with AIG’s Code of Ethics from the Complaints Committee, which is provided in confidence.

AIG NEWS Issue 120 · May 2015
AMIRA International is building Data Metallogenica (www.dmgeode.com) as a web-based not-for-profit global encyclopedia of ore deposits for the mining industry and associated institutions. While it is still growing at a rapid rate, DM already contains quality technical information on over 5,000 mineral deposits of all kinds from around the world. It has been supported by over 150 mining & exploration companies, many geological surveys and many professional societies/associations.

Some years ago, the Australian Institute of Geoscientists, through a one-off donation, became a Foundation Sponsor of DM to assist its continued growth. As a member of AIG, you can therefore subscribe as an individual to DM for $100 per year for unlimited access and downloads (this is a 50% discount compared to non-members). We hope you find DM of interest and can support us in our future growth. This can be done on-line on the website.

Some points of interest:
• You can do an Advanced Free Search from the Home Page which allows you to see what is already in the database (without any commitment).
• Much of the information is unique or difficult (if not impossible) to find, making the website a major time saver for locating important technical information – all presentations are public (non-confidential) and vetted for quality before loading.
• The website contains several different databases:
  • Mineral Deposits – technical data on over 5,000 specific deposits around the world
  • Commodity Overviews – global overviews on specific commodities and deposit types by world experts, plus recommended individual deposits to further investigate
  • Regional Overviews – context overviews of major mineralised regions (not yet activated and in its early stages)
  • Technology Overviews – expert reviews of geoscience, exploration and other mining disciplines (not yet activated and in its early stages)
  • Geoscience Thesis Lists – lists of all Australian geoscience theses up to 2007 (soon to be updated) and with addition of all South African geoscience theses to 1999

• The deposit database can be quickly searched by many different criteria eg name, country, commodity class, availability of high-quality sample photographs (70,000 representative samples of ore, alteration, host rocks) or spectral mineralogy, and many special categories such as geology, regolith, core photos, historical data etc
• Over 80 full geoscience theses for specific deposits are currently available on the website
• All deposits appear on a Google map which can be instantly zoomed to the maximum allowed
• Almost all information can be immediately translated to any of about 80 languages making DM extremely valuable for international reference, training and education (eg all European & Scandinavian languages, Arabic, Russian; most Asian languages including Mandarin, Japanese and Hindi, Swahili, Afrikaans etc etc)
• Previous sponsors of DM have given free access to many universities and geological surveys in developing countries, helping train the next generation of economic geologists
• It is hoped to add a wiki component soon so others can add their unique information and photos for specific deposits so that we preserve much fragile knowledge before it is too late.

If you like what we are doing or what you see, please tell others about DM. Remember the website is continually growing and improvements being added.

Alan Goode
Director Data Metallogenica, AMIRA International

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www.dmgeode.com
PACRIM 2015 in Hong Kong

Wayne Spilsbury

AIG co-branded AusIMM’s PACRIM 2015 conference held in Hong Kong on 18 – 20 March and were granted a free Exhibitor’s booth. As the name implies, the Conference focused on the economic geology of the Pacific Rim. There were about 250 participants, including speakers, exhibitors and a contingent of eager students from the University of Hong Kong. Each day started with 2 - 3 keynote presentations from international experts (4 – USA, 2 – AUS, 2 - CAN and 1 - UK) and then separated into 2 streams of themed sessions.

In total there were 86 presentations and the organisers are commended for sourcing speakers from around the Pacific. The conference also hosted 4 workshops and organised 4 field trips to mining districts in China.

The AIG booth was well-frequented by members but more importantly potential new members. The booth also gave me a chance to try out my new “Selfie-stick” for these fine photos. 📸

Events calendar

Keep up to date with upcoming AIG and Geological events at www.aig.org.au/events

June 2015

- AIG, AusIMM, GSA: Aeromagnetics, Geology and Exploration: Sydney NSW
  - The Royal Exchange of Sydney, Sydney NSW
  - June 3, 2015 | 9:15am – 7:30pm

- AIG, AusIMM, GSA: Aeromagnetics, Geology and Exploration: Illawarra NSW
  - University of Wollongong, Wollongong NSW
  - June 4, 2015 | 6:00pm – 8:30pm

- NEW ENGLAND OROGEN: Geology, Tectonics, Economics
  - The Theodore Club, Brisbane QLD
  - June 5, 2015 | 8:30am - 5:00pm

- New England Field Conference
  - Brisbane Transit Centre, Brisbane QLD
  - June 6, 2015 - June 8, 2015

- Water Management for Shale and Tight Gas Resources
  - Parmelia Hilton, Perth WA
  - June 8, 2015 - June 9, 2015

- GPIC: Redefining G.O.D. | Bill McCallum
  - Basement on View, Bendigo VIC
  - June 9, 2015 | 6:30pm - 8:00pm

- isGAS Advanced Techniques
  - Reflex, Balcatta WA
  - June 10, 2015

- Advanced Field Training
  - Mount Isa – Cloncurry, Mount Isa QLD
  - June 29, 2015 - July 6, 2015

July 2015

  - The Kelvin Club, Melbourne VIC
  - July 2015 (Date TBA)

- Value Creation in Exploration
  - Burswood on Swan Convention Centre, Burswood WA
  - July 13, 2015

August 2015

- Saying Goodbye to a 2D Earth
  - Quality Inn Margaret River, Margaret River WA
  - August 2, 2015 - August 7, 2015

- Geoscience Australia Open Day
  - Geoscience Australia, Symonston ACT
  - August 23, 2015 | 10:00am - 3:00pm

- Integrated Spatial Analysis and Remote Sensing of Mineral Exploration Targets
  - James Cook University, Townsville QLD
  - April 21, 2016 - May 6, 2016

- 2015 Queensland Exploration Council Breakfast
  - Brisbane Convention and Exhibition Centre, South Bank QLD
  - June 10, 2016 | From 7:15 am

- Applied Geochemistry
  - Reflex, Balcatta WA
  - June 23, 2016 - June 24, 2016

- 35th International Geological Congress
  - Cape Town International Convention Centre, Cape Town, SOUTH AFRICA
  - August 27, 2016 - September 4, 2016

October 2015

- Bowen Basin Symposium 2015
  - Brisbane Convention and Exhibition Centre, South Bank QLD
  - October 7, 2015 - October 9, 2015

November 2015

- Value Creation in Exploration
  - Burswood on Swan Convention Centre, Burswood WA
  - July 13, 2015

- Joint SEG – Codes Conference: World Class Ore Deposits: Discovery to Recovery
  - CODES (University of Tasmania), Sandy Bay TAS
  - September 27, 2015 - September 30, 2015

- Mines & Wines 2015: Uncorking the Tasmanides
  - Queenbayian Bicentennial Hall, Queenbayian NSW
  - September 2, 2015 - September 4, 2015

2016

- Business and Financial Management in the Minerals Industry
  - James Cook University, Townsville QLD
  - February 2, 2016 - February 12, 2016

- Integrated Spatial Analysis and Remote Sensing of Mineral Exploration Targets
  - James Cook University, Townsville QLD
  - April 21, 2016 - May 6, 2016

- 35th International Geological Congress
  - Cape Town International Convention Centre, Cape Town, SOUTH AFRICA
  - August 27, 2016 - September 4, 2016
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