



## Christmas reading, student projects, boom/bust and the future of UAV magnetometry



Phil Schmidt

The last issue of *Preview* was certainly good Christmas reading, especially with Don Emerson's erudite exposé on lapis lazuli and Roger Henderson's article on the first gravity meter built in Australia (perhaps a global first). The issue also contained interesting summaries of student projects in Australian universities in 2015 that suggest there is a healthy through-put of students in geophysics courses in Australia. Sadly there will probably be a decline in graduate numbers in the earth sciences for the next few years. Student through-put always lags the beginning and end of cycles in our boom-bust industry. Thus it ever was, which is a pity as now would probably be a good time to start to catch the wave of the next boom.

An article by Brendan Pearson, Chief Executive of the Minerals Council of Australia (MCA), also made for interesting reading over Christmas:

'The Turnbull Government's National Innovation and Science Agenda will

help ensure that Australia's comparative advantage in mining is maintained and enhanced through continual innovation in the years to come.

Innovation isn't about compensating for the end of the mining boom. It's about ensuring that Australia's long-term advantage in mining continues, notwithstanding cyclical activity.

I think that such statements, although repeating the obvious to people in the industry, need to be made periodically to counter relentless media articles speculating that mining in Australia has passed its use-by-date. For those looking for some facts go to: [http://www.minerals.org.au/file\\_upload/files/publications/Innovation\\_The\\_Facts\\_Dec\\_2015.pdf](http://www.minerals.org.au/file_upload/files/publications/Innovation_The_Facts_Dec_2015.pdf)

Until last year I was more or less an observer of the progress of the National Rock Garden (<http://www.nationalrockgarden.org.au/>). I have visited the garden and admired the Federation Rocks, some of which I have been challenged by during my career. Now, as ASEG President, I have been asked about ways in which the public can be shown how geophysics has contributed to Australia's mineral industry. These discussions are ongoing but I think that the best avenue is to prepare displays for the Education Pavilion that relate to the Federation Rocks. For instance, the Tasmanian dolerite played a pivotal role in the Continental Drift Debate of the 1950s and 60s. The interpretation of magnetic anomalies over WA's Hamersley Banded Iron Formations was important to understanding geological

structures and, ultimately, to Australia's iron-ore prosperity. The near-surface geophysics of the Hawkesbury Sandstone and related strata has saved millions in rail and roadway tunnelling under Sydney. The Education Pavilion 'will seek to link with and complement, rather than to compete with, those at Questacon, the CSIRO Discovery Centre, the National Arboretum and Geoscience Australia's Education Centre'.

Discussions amongst a few UAV hopefuls (I include myself here) suggest that the time is right for us to hold a workshop. Unfortunately we may have missed the boat for the next ASEG meeting in Adelaide, but I think there is now enough activity for ASEG to consider forming a special interest group. While I and others have been mucking around with fluxgates, which is instructive if not frustrating, ultimately I think we have been wasting our time. Sometime this year Geometrics should have their MFAM (MicroFabricated AtomicMagnetometer) on sale. Geometrics recently announced a miniaturised atomic clock magnetometer allowing a 10-fold reduction in size and power consumption without sacrificing performance (15 cc in size and 2 W power). This picture from the Geometrics website shows the reduction in size they have achieved. I don't think the coin is indicative of the price, which initially will be pretty steep, but, with mass production, the price will inevitably decline and even hobbyists will be able to afford one.

*Phil Schmidt  
ASEG President  
[president@aseg.org.au](mailto:president@aseg.org.au)*



Conventional Commercial Magnetometer

Above: Sensor Package Using MFAM Technology

# EAGE

# *See you in Barcelona!*

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EXPLORATION  
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## **NEAR SURFACE GEOSCIENCE** CONFERENCE & EXHIBITION





## Welcome to new Members

The ASEG extends a warm welcome to 21 new Members approved by the Federal Executive at its December and January meetings (see table).

First name	Last name	Organisation	State	Country	Membership type
Hassan	Abbas	Shell Australia	WA	Australia	Associate
Emma	Brand	Origin Energy	QLD	Australia	Active
Tongjun	Chen	China University of Mining and Technology		China	Associate
Craig	Covich	Mosman Council	NSW	Australia	Associate
Feri	Ferdianto	Independent Consultant		Malaysia	Active
Jose	Gomez Martinez	Universidad Industrial de Santander		Columbia	Student
Thomas	Harris	Merlin Geophysics	SA	Australia	Active
Mahmood ul	Hassan	Royal Institute of Technology, Stockholm		Sweden	Student
Rhys	Hawkins	ANU	ACT	Australia	Student
David	Inkster	Geoplus Pty Ltd	SA	Australia	Active
Mosayeb	Khademi Zahedi	Independent Consultant	WA	Australia	Active
Yoshua	Kwizera	Curtin University	WA	Australia	Student
Bill	Mansfield	Adelaide University	SA	Australia	Student
Tim	Marshall	Rio Tinto Exploration	QLD	Australia	Associate
Andrew	Pearson	The University of Melbourne	VIC	Australia	Student
Dmitry	Poik	Curtin University	WA	Australia	Student
David	Rowe		SA	Australia	Active
Matthew	Sisson	Monash University	VIC	Australia	Student
Ashley	Uren	UWA	WA	Australia	Student
Carmine	Wainman	University of Adelaide	SA	Australia	Student
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e: [gem@gemgeophysics.com.au](mailto:gem@gemgeophysics.com.au)  
w: [www.gemgeophysics.com.au](http://www.gemgeophysics.com.au)

## ASEG Federal Executive 2014–15

Phil Schmidt: President (Honours and Awards Committee)  
Tel: 0410 456 495  
Email: [president@aseg.org.au](mailto:president@aseg.org.au)

Katherine McKenna: President Elect (Membership Committee Chair)  
Tel: (08) 9477 5111  
Email: [membership@aseg.org.au](mailto:membership@aseg.org.au)

Barry Drummond: Secretary  
Tel: (02) 6254 7680  
Email: [fedsec@aseg.org.au](mailto:fedsec@aseg.org.au)

Theo Aravanis: Treasurer (Finance Committee Chair)  
Tel: (03) 9242 3327  
Email: [treasurer@aseg.org.au](mailto:treasurer@aseg.org.au)

Greg Street: Past President (Publications and History Committees)  
Tel: (08) 9388 2839  
Email: [pastpresident@aseg.org.au](mailto:pastpresident@aseg.org.au)

Koya Suto: Vice President (International Affairs Committee Chair, Research Foundation)  
Tel: (07) 3876 3848  
Email: [vicepresident@aseg.org.au](mailto:vicepresident@aseg.org.au)

Kim Frankcombe: Past President (AGC Representative, Conference Advisory Committee and Technical Standards Committee)  
Tel: (08) 6201 7719  
Email: [kfrankcombe@iinet.net.au](mailto:kfrankcombe@iinet.net.au)

Wendy Watkins (Education Committee Chair)  
Tel: (02) 9921 2010  
Email: [continuingeducation@aseg.org.au](mailto:continuingeducation@aseg.org.au)

Tania Dhu (State Branch Representative, Specialist and Working Groups Liaison)  
Tel: 0422 091 025  
Email: [branch-rep@aseg.org.au](mailto:branch-rep@aseg.org.au)

David Annetts (Web Committee Chair)  
Tel: (08) 6436 8517  
Email: [david.annetts@csiro.au](mailto:david.annetts@csiro.au)

Marina Costelloe  
Tel: (02) 6249 9347  
Email: [marina.costelloe@ga.gov.au](mailto:marina.costelloe@ga.gov.au)

Danny Burns  
Tel: (08) 8338 2833  
Email: [danny.burns@beachenergy.com.au](mailto:danny.burns@beachenergy.com.au)

## Standing Committee Chairs

Finance Committee Chair: Theo Aravanis  
Tel: (03) 9242 3327  
Email: [treasurer@aseg.org.au](mailto:treasurer@aseg.org.au)

Membership Committee Chair:  
Katherine McKenna  
Tel: (08) 9477 5111  
Email: [membership@aseg.org.au](mailto:membership@aseg.org.au)

State Branch Representative: Tania Dhu  
Tel: 0422 091 025  
Email: [branch-rep@aseg.org.au](mailto:branch-rep@aseg.org.au)

Conference Advisory Committee Chair:  
Michael Hatch  
Email: [cac@aseg.org.au](mailto:cac@aseg.org.au)

Honours and Awards Committee Chair:  
Andrew Mutton  
Tel: (07) 3278 5733  
Email: [awards@aseg.org.au](mailto:awards@aseg.org.au)

Publications Committee Chair: –  
Tel: –  
Email: [publications@aseg.org.au](mailto:publications@aseg.org.au)

Technical Standards Committee Chair:  
Tim Keeping  
Tel: (08) 8226 2376  
Email: [technical-standards@aseg.org.au](mailto:technical-standards@aseg.org.au)

ASEG History Committee Chair:  
Roger Henderson  
Tel: 0408 284 580  
Email: [history@aseg.org.au](mailto:history@aseg.org.au)

International Affairs Committee Chair:  
Koya Suto  
Tel: (07) 3876 3848  
Email: [vicepresident@aseg.org.au](mailto:vicepresident@aseg.org.au)

Education Committee Chair: Wendy Watkins  
Tel: (02) 9921 2010  
Email: [continuingeducation@aseg.org.au](mailto:continuingeducation@aseg.org.au)

Web Committee Chair: David Annetts  
Tel: (08) 6436 8517  
Email: [david.annetts@csiro.au](mailto:david.annetts@csiro.au)

Research Foundation Chair: Philip Harman  
Tel: 0409 709 125  
Email: [research-foundation@aseg.org.au](mailto:research-foundation@aseg.org.au)

Research Foundation – Donations: Peter Priest  
Email: [pwppriest@senet.com.au](mailto:pwppriest@senet.com.au)

## Specialist Groups

Near Surface Geophysics Specialist Group  
President: Greg Street  
Tel: (08) 9388 2839  
Email: [gstreet@iinet.net.au](mailto:gstreet@iinet.net.au)

Early Career Geophysicists Specialist Group  
President: Millie Crowe  
Tel: (02) 6249 9846  
Email: [Millicent.Crowe@ga.gov.au](mailto:Millicent.Crowe@ga.gov.au)

## ASEG Branches

### Australian Capital Territory

President: Marina Costelloe  
Tel: (02) 6249 9347  
Email: [actpresident@aseg.org.au](mailto:actpresident@aseg.org.au)

Secretary: Millie Crowe  
Tel: (02) 6249 9846  
Email: [actsecretary@aseg.org.au](mailto:actsecretary@aseg.org.au)

### New South Wales

President: Mark Lackie  
Tel: (02) 9850 8377  
Email: [nswpresident@aseg.org.au](mailto:nswpresident@aseg.org.au)

Secretary: Sherwyn Lye  
Tel: (02) 8960 8417  
Email: [nswsecretary@aseg.org.au](mailto:nswsecretary@aseg.org.au)

### Queensland

President: Fiona Duncan  
Tel: (07) 3042 7502  
Email: [qldpresident@aseg.org.au](mailto:qldpresident@aseg.org.au)

Secretary: Megan Nightingale  
Tel: (07) 3839 3490  
Email: [qldsecretary@aseg.org.au](mailto:qldsecretary@aseg.org.au)

### South Australia & Northern Territory

President: Joshua Sage  
Tel: 0438 705 941  
Email: [sa-ntpresident@aseg.org.au](mailto:sa-ntpresident@aseg.org.au)

Secretary: Michael Dello  
Tel: –  
Email: [sa-ntsecretary@aseg.org.au](mailto:sa-ntsecretary@aseg.org.au)

NT Representative: Tania Dhu  
Tel: 0422 091 025  
Email: [nt-rep@aseg.org.au](mailto:nt-rep@aseg.org.au)

### Tasmania

President: Mark Duffett  
Tel: (03) 6165 4720  
Email: [taspresident@aseg.org.au](mailto:taspresident@aseg.org.au)

Secretary: Anya Reading  
Tel: (03) 6226 2477  
Email: [tassecretary@aseg.org.au](mailto:tassecretary@aseg.org.au)

### Victoria

President: Asbjorn Christensen  
Tel: (03) 9885 1378  
Email: [vicpresident@aseg.org.au](mailto:vicpresident@aseg.org.au)

Secretary: Seda Rouxel  
Tel: 0405 821 575  
Email: [vicsecretary@aseg.org.au](mailto:vicsecretary@aseg.org.au)

### Western Australia

President: Kathlene Oliver  
Tel: 0411 046 104  
Email: [wapresident@aseg.org.au](mailto:wapresident@aseg.org.au)

Secretary: David Farquhar-Smith  
Tel: 0409 840 503  
Email: [wasecretary@aseg.org.au](mailto:wasecretary@aseg.org.au)

### The ASEG Secretariat

Ben Williams  
The Association Specialists Pty Ltd (TAS)  
PO Box 576, Crows Nest, NSW 1585  
Tel: (02) 9431 8622  
Fax: (02) 9431 8677  
Email: [secretary@aseg.org.au](mailto:secretary@aseg.org.au)



## Notice of Annual General Meeting (AGM)

The 2016 AGM of the Australian Society of Exploration Geophysicists (ASEG) will be held in Perth on 13 April 2016. The meeting will be hosted by the WA Branch at Minespace, 1292 Hay Street, West Perth ([www.minespace.com.au](http://www.minespace.com.au)). Drinks will be available from 17:30 and the meeting will begin at 18:00.

The business of the Annual General Meeting will include:

- To confirm the minutes of the 2015 Annual General Meeting;
- To receive from the Federal Executive reports on the activities of the Society during the last preceding financial year;
- To receive and consider the financial accounts and audit reports that are required to be submitted to Members pursuant to the Society's Constitution and to law;
- To consider and if agreed approve any amendments to the Constitution of the Society that the Federal Executive may bring to the meeting;
- To report the ballot results for the election of the new office holders for the Federal Executive;
- To confirm the appointment of auditors for the 2016 financial year.

The AGM will be followed by a scientific presentation. The speaker and title will be advised closer to the event.

### Invitation for candidates for the Federal Executive

Members of the Federal Executive serve in an honorary capacity. They are all

volunteers and Members are encouraged to consider volunteering for a position on the Executive or on one of its committees. Current members are listed in *Preview*; please contact one of them if you wish to know more about volunteering for your society.

The Federal Executive comprises up to 12 members, and includes the following four elected members:

- (i) President,
- (ii) President Elect,
- (iii) Secretary, and
- (iv) Treasurer.

These officers are elected annually by a general ballot of Members. Katherine McKenna was elected as President-Elect in 2015 and as such will stand for the position of President in 2016. Members wishing to nominate for one of these positions should note that in accordance with Article 8.2 of the ASEG Constitution '...The elected members of the Federal Executive are designated as Directors of the Society for the purposes of the [Corporations] Act.'

The following officers are also recognised in the Society's Constitution and serve on the Federal Executive:

- (i) Vice President,
- (ii) the Immediate Past President (unless otherwise a member of the Federal Executive),
- (iii) the Chairman of the Publications Committee,
- (iv) the Chairman of the Membership Committee,

- (v) the Chairman of the State Branch Committees, and
- (vi) up to three others to be determined by the Federal Executive.

These officers are appointed by the Federal Executive from the volunteers wishing to serve the Society.

Nominations for all positions (except Past President) are very welcome. Please forward the name of the nominated candidate and the position nominating for, along with the names of two Members who are eligible to vote (as Proposers), to the Secretary:

Barry Drummond  
ASEG Secretary  
Care of the ASEG Secretariat  
PO Box 576  
Crows Nest  
NSW, 1585  
Tel: (02) 9431 8622  
Fax: (02) 9431 8677  
Email: [fedsec@aseg.org.au](mailto:fedsec@aseg.org.au)

Nominations for the elected positions must be received via post, fax or email **no later than COB Wednesday 16 March 2016**. Positions for which there are multiple nominations will then be determined by ballot of Members and results declared at the Annual General Meeting.

Proxy forms and further details of the meeting will be sent to Members prior to the meeting by email and made available to Members on the Society's website.



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## Executive Brief

Since the last report from the Federal Executive in *Preview* 179 (December 2015) the Federal Executive has met on two occasions: 19 November and 17 December. The following brief summary outlines key issues dealt with by the Federal Executive on those occasions.

### Society finances

The Society will finish the year in a sound financial position. Unaudited figures before final payments were made in December were:

Total Assets \$1,438,310.86  
Total Liabilities \$19,038.56  
Net Assets \$1,419,272.30

Audited accounts for the 2015 financial year will be available early in 2016.

The Federal Executive spent some time at the November meeting discussing the poor financial information that was provided by some Branches, which led to both time (and therefore money) being spent by the Secretariat chasing up valid tax invoices so that payments could be made to suppliers and, consequently, delays in payments to the suppliers. The Executive resolved to revise the purchasing guidelines for the Society. A revised version of the guidelines will be circulated to Branches for comment early in 2016.

Most of the activities of the Society that are visible to Members are conducted by our Branches. The Branches develop draft annual budgets in the December/January period, and the Federal Executive then considers state Branch financial situations on a case by case basis. Most Branches

finished 2015 in a sound financial position but, since 2014, the WA Branch has been striving to reduce a considerable deficit, accumulated over a number of years and principally caused by high administration expenses associated with monthly technical events, seminars, and meetings. Under the existing policy for dealing with conference surpluses, WA is eligible to receive \$25k of the surplus from the 2015 Perth conference. It will also receive some of the surplus from a workshop in Perth on water management for shale and tight gas that was co-sponsored with several other societies. Even with this additional funding, the WA Branch would have started 2016 with a debit of ~\$15k, limiting its ability to provide services to its Members. Given the healthy financial state of the Society, the Federal Executive agreed unanimously to make a one off contribution to the Branch's accounts. This contribution will allow the Branch to wipe out its deficit when capitation fees are transferred to the Branch in 2016. Thus, all Branches will be in a healthy financial position in 2016.

### The 2016 Annual General Meeting

The Federal Executive reviewed arrangements being made to hold the 2016 Annual General Meeting in Perth in April. A notice of the AGM appears elsewhere in this issue of *Preview* and will be posted on the Society's website.

### Membership

Membership numbers at the end of November 2015 were up 5% on those for

the same time in 2014, although the growth in numbers was not uniform across the Branches. The numbers are shown in Table 1.

At the meeting in December, the Executive approved 8 additional new memberships not included in Table 1. The Membership Committee has an additional 16 applications for new membership that are being finalised before being presented to the Executive for approval.

The Federal Executive finds that the arrangements set out in the Society's Constitution for approving new members are inadequate for some grades of membership and ambiguous for student membership. The Constitution also allows for memberships to be cancelled by the Federal Executive under certain conditions but provides guidance to the Executive that is at best subjective.

The Executive therefore resolved to look at the wording of the Constitution with a view to bringing changes to the AGM in April for approval. The changes would clarify the arrangements for appointing Members, codify some guidelines for cancelling membership and, to the extent possible, remove administrative arrangements from the Constitution and place them in a By Law or By Laws where they can be managed and amended more flexibly by the Federal Executive.

The Federal Executive spent some time during its December meeting discussing a case in which a Member used the Membership Directory to send advertising material to all Members of the Society who were listed in the Directory. This action was in contravention of the

Table 1. ASEG Membership in November 2015

Branch	2015 Members							TOTAL	Same time in 2014	Change (%)
	Active/Associate	Student	Retired	Honorary	Corporate	Journal exchange				
ACT	46	10	7	3	0	1	67	62	8%	
NSW	93	30	11	7	1	0	142	151	-6%	
QLD	94	25	3	1	4	0	127	124	2%	
SA/NT	91	27	2	2	4	0	126	156	-19%	
TAS	13	3	1	0	0	0	17	13	31%	
VIC	56	8	5	5	1	0	75	66	14%	
WA	362	45	3	1	2	0	413	387	7%	
International	164	24	5	1	1	3	198	150	32%	
TOTAL	919	172	37	20	13	4	1165	1109	5%	



copyright statement in the Directory. The Executive subsequently received a number of complaints from Members, including from one Member who said he would resign from the Society as a consequence. The Member who sent out the advertising material was approached by both the President and the Editor of the Membership Directory and subsequently apologised to the President. The Executive resolved at its meeting in December that this column is the appropriate vehicle for passing on that apology to all Members.

Membership renewals were sent out in late 2015. The Membership Committee received requests from 6 Members seeking assistance due to hardship during the current downturn in industry. They were considered in confidence by the Committee. The Chair asked the Federal Executive to consider all of the requests while keeping them anonymous. The case made by the Committee was based on the duration of memberships, periods of unemployment, and previous volunteer work for the Society. Payment of the fees for these Members was suspended for 2016. Each case will be reviewed after 6 months and if the Members have found

work they may be charged fees for the remainder of the year.

This situation occurs from time to time because of the cyclic nature of the resources sector and successive Federal Executives have striven to be sympathetic. However, to ensure that each case is taken equally on merit, the Executive will develop a set of guidelines that can be applied from now on.

We were recently informed by the AIG that a number of non-scientific individuals and societies have been implying membership of the ASEG (e.g. see 'Associations' in <http://creation.com/andrew-a-snelling>) and other learned and professional societies in order to gain acceptance of their non-scientific agendas. Please ask the ASEG ([secretary@aseg.org.au](mailto:secretary@aseg.org.au)) for confirmation of membership before giving credence to such claims.

**Publications**

Our Journal *Exploration Geophysics* is now published jointly with the Japanese and Korean geophysical societies. The Memorandum of Understanding (MOU) with these societies is due for renewal

and negotiations are underway on the wording and cost sharing arrangements in a new MOU. The Federal Executive discussed ways to leave open the expansion of the arrangements to other societies during the term of the new MOU.

**2016 and 2018 geophysical conferences and exhibitions**

The Federal Executive discussed progress with the planning of the 2016 ASEG-PESA-AIG 25th Geophysical Conference and Exhibition. The downturn in the resources sector is causing some concerns and the Executive noted that the conference organising committee is constantly revising its budget to minimise the risk that the conference will make a loss due to low attendance.

The Executive agreed that the NSW Branch is to be offered the 2018 conference to be held in the first quarter of the year in conjunction with PESA and AIG.

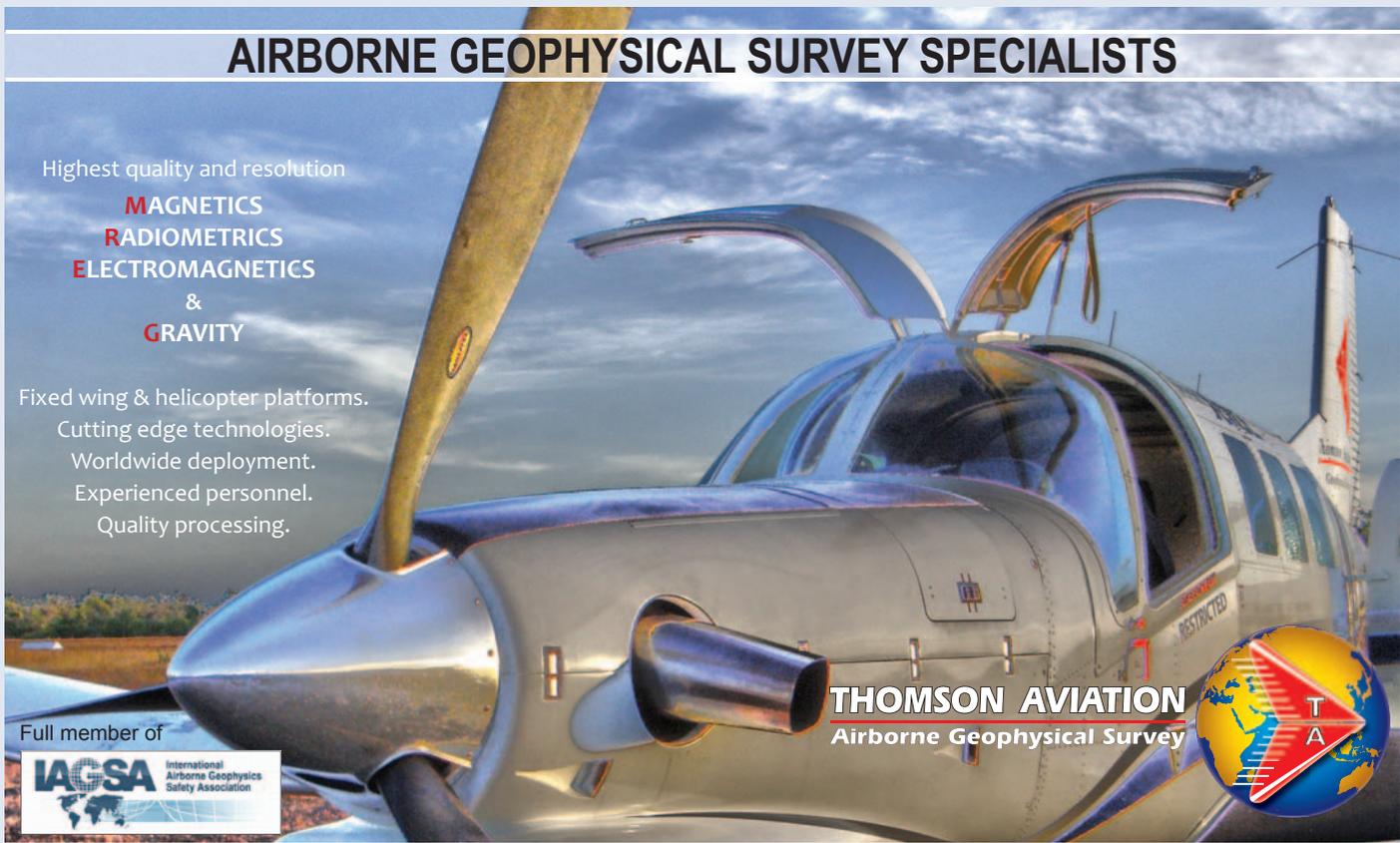
*Barry Drummond*  
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David Abbott [david@thomsonaviation.com.au](mailto:david@thomsonaviation.com.au) Paul Rogerson [paul@thomsonaviation.com.au](mailto:paul@thomsonaviation.com.au)





## ASEG Branch News

### Queensland

The Queensland ASEG Branch hopes that everyone has enjoyed their Christmas and New Year's break and we would like to remind all our Members to re-new their memberships in 2016.

The Queensland Branch will host its first meeting of the year in February – the details are still being organized so please keep checking the ASEG website for information. The Annual General Meeting is scheduled for March and all positions will be up for nomination. Please contact [qldsecretary@aseg.org.au](mailto:qldsecretary@aseg.org.au) if you require further information regarding Branch position nominations.

*Megan Nightingale*  
(QLD Branch Secretary)

### South Australia & Northern Territory

The SA/NT Branch had a great end to the year with two fantastic events held in November and December. We were fortunate enough to be joined by the SEG Near Surface Honorary Lecturer, **Dr Hansruedi Maurer**, who presented on 'the curse of dimensionality in exploring the subsurface.' A great turnout ensured some lively discussion into the evening following this very captivating presentation.

Our final event for the year was a combination of two of our most popular events, the Annual Student Night and our Christmas Party. This event also saw a very encouraging turnout from the local Branch membership who helped support local students give presentations on their recently completed honours projects. We thank **Matthew Musolino, Brad Cox and Matthew McIntyre** for their willingness to take part and their great presentations, but congratulations must go to **Max Fry**, who won the prize for best presentation on the night. After the official business of the evening was complete all the attendees were invited to stay and celebrate the festive season.

The local Branch held a number of successful technical talks and courses as well as other industry events in 2015 with numerous local, interstate and overseas guest speakers, as well as a healthy social calendar. We would like to thank all of our sponsors for 2015, including Beach Energy, the Department of State Development, Geokinetics, Minotaur

Exploration, Petrosys, Santos, Schlumberger, Borehole Wireline and Zonge. We hope all of our 2015 sponsors will lend their support again for 2016 and, of course, if you or your company are not in that list and would like to give your support, please get in touch at the email below.

I would also like to thank the 2015 Branch Committee, with special mentions to **Adam Davey** our Treasurer for all his hard work and the three Members who will be stepping down this year. They are **Luke Gardiner**, who has previously been both President and Treasurer in his near decade on the committee, **Jenni Clifford**, who has served as Treasurer and has been instrumental in organising the ever popular Melbourne Cup Luncheon for more years than I can remember, and **Michael Dello**, one of our most recent Committee Members, who quickly volunteered to be the local Branch Secretary for 2015. All your efforts are much appreciated by all of the Committee and the local Branch alike. As for those sticking around, we look forward to a great 2016. We also welcome any interested Members to the local Committee and any commitment, large or small, would be appreciated.

The first event for 2016 will be the AGM, to be held in early March, with our Annual Student BBQ to follow later that month. Please keep an eye out for more details.

Also, please remember that the Australian Society of Exploration Geophysicists 25th Geophysical Conference and Exhibition, to be co-hosted by PESA and AIG, will be held at the Adelaide Convention Centre from 21-24 August, 2016. Having grown from a relatively low-key event, first held in the AMF Centre in Adelaide in 1979, to the premiere exploration geophysical conference in the southern hemisphere, it is appropriate that the theme: Interpreting the Past, Discovering the Future is reflective of our Society's Members' ability to change, innovate and grow through time. We hope you can all make it.

As ever, new Members and other interested persons are always welcome to attend local events. For further details, please contact Josh at [joshua.sage@beachenergy.com.au](mailto:joshua.sage@beachenergy.com.au) or 8338 2833.

*Josh Sage*  
(SA/NT Branch President)

### Tasmania

An invitation to attend Tasmanian Branch meetings is extended to all ASEG Members and interested parties. Meetings are usually held in the CODES Conference Room, University of Tasmania, Hobart. Meeting notices, details about venues and relevant contact details can be found on the Tasmanian Branch page on the ASEG website.

Interested Members and other parties should also keep an eye on the seminar program of the University of Tasmania's School of Earth Sciences, which regularly delivers presentations of geophysical as well as general earth science interest. Contact Mark Duffett [taspresident@aseg.org.au](mailto:taspresident@aseg.org.au) for further details.

*Mark Duffett*  
(Tasmanian Branch President)

### Victoria

The approaching holidays and the end of 2015 were celebrated in style at the Annual Joint PESA-ASEG-SPE Christmas Luncheon on 9 December at the Victoria Hotel in Melbourne. This year **John Hughes** and **Bruce Holland** of The Norwood Resource presented 'The Norwood Resource: Dismantling Myths!' along with games, quizzes, excellent food and drink and even better company!

On Thursday 10 December the ASEG Victoria Branch hosted a technical meeting with **Dr Hansruedi Maurer**, ETH Zürich and SEG Honorary Lecturer, presenting 'The curse of dimensionality in exploring the subsurface'. The meeting was held at the Kelvin Club for a disappointingly small crowd. Despite the marginal turn-out Hansruedi delivered an excellent presentation, which sparked a lot of comments and questions from the audience.

#### Now for the upcoming events:

Following the summer break, the 'Joint ASEG/PESA/SPE Mid-Summer Social' will be the place for some serious networking to get 2016 going. The event will be held on Wednesday 10 February from 5pm at Henry & the Fox, 525 Little Collins Street in Melbourne's CBD. This event is limited to current ASEG Members only – so make sure you are up-to-date on your membership. Please note that this is a paid event – charged at



SEG HL Hansruedi Maurer presenting for a small, but attentive, audience in Melbourne's Kelvin Club.

only \$10 per person. Drinks and Canapés will be provided.

On Thursday 18 February the ASEG Victoria Branch will host the Annual General Meeting (AGM) along with the technical meeting with **Dr Phil Schmidt**, owner of Magnetic Earth and ASEG President, presenting 'Magnetic Exploration Projects in CSIRO from 1978 to Now'. The meeting will be held at the Kelvin Club, starting at 6pm (drinks and nibbles) for a 6:30pm presentation.

Pre-meeting registration for any of the upcoming events is mandatory, and can be made via the ASEG Events web-page. We look forward to seeing many ASEG Victoria Branch Members at the meetings in the coming months.

*Asbjorn Norlund Christensen  
(Victorian Branch President)*

### Western Australia

The WA Branch held two technical sessions towards the end of 2015:

- 18 November – **Hansruedi Maurer** as part of the SEG Honorary Lecturer Tour presented 'The Curse of Dimensionality in Exploring the Subsurface.' His talk provoked a lengthy and interesting discussion.
- 2 December – The student presentation night resulted in four awards from a total of eleven submissions from students from University of WA and Curtin University. Awards were presented to **Jacob Jackson, Tom Horrocks, Lee Tasker** and **Dane Padely** (all pictured below).

The Christmas wind-up was held combined with the AGM on 24 November at Willong Pavilion, Kings Park and up to 40 patrons attended a self-catered Greek BBQ with



ASEG WA Branch student award winners from left Tom Horrocks, Jacob Jackson, Lee Tasker and Dane Padely.

refreshments. The AGM duly re-elected the principal office bearers from 2015 and the Committee for WA will continue through the 2016 year as it stands.

Thanks go to all who assisted with the BBQ and to GPX for donating cool boxes and a refrigerator.

*Prue Leeming  
(WA Branch Preview correspondent)*

### Australian Capital Territory

2016 is shaping up to be another exciting year for the ASEG's ACT Members. The ACT Branch AGM will be held in March, **Serge Shapiro** will present a one day course in March, the Adelaide conference preparations, abstracts and presentations are already underway and a DISC course by **James Gaiser** is planned for August.

2015 was a busy year for our local Branch as, with the help of the Federal Executive and **Wendy Watkins** in particular, we were able to offer many world class short courses and lectures.

Some of the highlights from last year include: February's Perth Conference, **Peter Milligan's** talk at our March AGM, the award of two scholarships to two amazing students, a UAV talk by **Adam Kroll** and **Andrew Tridgell**, an out-of-this-world space geophysics talk by **Jon Clarke** and a fun Geo-Societies Quiz night in August. September saw **Josef Holzschuh** present his near surface seismic talk and **Phillip Wynne** present on gravity, October brought two OzStep courses to Canberra – **David Lumley**



Members enjoying the WA Branch Christmas wind-up at Willong Pavilion, Kings Park.

and **Bob Musgrave**, in November the ACT Branch held one of the largest EAGE InSAR courses in the world presented by **Alessandro Feretti**, and December saw **Hansruedi Maurer** deliver his near surface talk on ‘the curse of dimensionality’.

A big thank you to **Millie Crowe** in her role as Secretary and **Ross Costelloe** in his role as Treasurer. Thank you to the current Branch Committee Members: **Phill Wynne, Bill Jones, Ned Stolz, Eva Papp** and **Ray Tracey** for their input and support.

**A special thank you to those who signed up to Facebook just to help us reach 500 likes – we did it!**

*Marina Costelloe*  
(ACT Branch President)

## New South Wales

In November **Roger Henderson** (Chair of ASEG History Committee) gave a talk about the gravity meter built at University of Sydney (Physics Department) in the 1890s and his belief that it is the first in the world of the modern type using a

fused-quartz beam (Roger published a paper on this in the last issue of *Preview*). Roger described the plans of the meter and how it was constructed and the trials and tribulations that the physicists went through to achieve their goals. Roger also presented the data that the scientists acquired using it. Much discussion and reminiscing of times past followed.

In December **Kyle Blay** (CSIRO – Manufacturing), gave us a talk on a remote, rapid and accurate three-dimensional ore waste boundary tracking system. Kyle explained that understanding the final location of the various grades is vital to ensure valuable gold is not unnecessarily discarded (ore loss), or uneconomic waste rock is put through the processing plant (ore dilution). Kyle explained how recently developed technology leverages magnetic positioning techniques and through-rock communications to determine the locations of markers that are embedded within the rock bench both before and after the blast. This technology means the grade boundaries can be more accurately known and so ore loss and dilution can be reduced. Plenty of

discussion finished off the last meeting for the year

First up this year, the NSW Branches of AIG, GSA and ASEG are presenting a two day short course by **Professor Mike Dentith**, ‘Geophysics for the Mineral Exploration Geoscientist’ based on his 2014 book of same name and co-authored with Steve Mudge.

The course will be held in The Barbarian Room, Level 3, The Rugby Club, Rugby Place, off 31 Pitt Street, Sydney, 16–17 February, 2016. The scheduled monthly Branch meeting will follow (17:30 for 18:00) to be addressed by Mike after suitable refreshment.

An invitation to attend NSW Branch meetings is extended to interstate and international visitors who happen to be in town at the time. Meetings are held on the third Wednesday of each month from 5:30 pm at the Rugby Club in the Sydney CBD. Meeting notices, addresses and relevant contact details can be found on the NSW Branch website.

*Mark Lackie*  
(NSW Branch President)

## ASEG calendar

### ASEG calendar: technical meetings, courses and events

Date	Branch	Event	Presenter	Time	Venue
<b>2016</b>					
10 Feb	VIC	Annual Joint PESA-ASEG-SPE Mid-Summer Social	TBA	1700–2000	Henry & the Fox, 525 Little Collins Street, Melbourne
16–17 Feb	NSW	Geophysics for the Mineral Exploration Geoscientist	Mike Dentith	TBA	The Barbarian Room, Level 3, The Rugby Club, Rugby Place, off 31 Pitt Street, Sydney
17 Feb	NSW	Technical meeting	Mike Dentith	1730–2000	The Rugby Club, Rugby Place, off 31 Pitt Street, Sydney
18 Feb	VIC	AGM & Technical Night: Magnetic exploration projects in CSIRO from 1978 to now	Phil Schmidt	1800–2000	The Kelvin Club, 14–30 Melbourne Place (off Russell Street), Melbourne
Early Mar	ACT	ASEG ACT Branch AGM	TBA	TBA	TBA
Early Mar	SA&NT	ASEG SA&NT Branch AGM	TBA	TBA	TBA
Early Mar	QLD	ASEG QLD Branch AGM	TBA	TBA	TBA
15 Mar	WA	Rock physics and geomechanics of fluid-induced seismicity: hydraulic fracturing, stimulation of geothermal systems and hazard assessment	Serge A. Shapiro	TBA	Minespace, Level 1, 1292 Hay Street, West Perth
21 Mar	ACT	Rock physics and geomechanics of fluid-induced seismicity: hydraulic fracturing, stimulation of geothermal systems and hazard assessment	Serge A. Shapiro	TBA	Geoscience Australia, Room 1.024, Corner of Jerrabomberra Avenue and Hindmarsh Drive, Symonston, ACT
13 Apr	WA	2016 ASEG AGM	TBA	1730–2000	Minespace, 1292 Hay Street, West Perth
21 Aug	SA	SEG DISC: 3C Seismic and VSP: Converted Waves and Vector Wavefield Applications	James Gaiser	TBA	TBA
26 Aug	ACT	SEG DISC: 3C Seismic and VSP: Converted Waves and Vector Wavefield Applications	James Gaiser	TBA	TBA
29 Aug	WA	SEG DISC: 3C Seismic and VSP: Converted Waves and Vector Wavefield Applications	James Gaiser	TBA	TBA

TBA, to be advised (please contact your state Branch Secretary for more information).