



The Great Australian Byte

The Newsletter of the Australian Geoscience Information Association (Inc.)
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SEASON'S GREETINGS



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AGIA is a member of the Australian Geoscience Council





AGIA NEWS HIGHLIGHTS

The *AGIA 2013 Geoscience Information Seminar: Can you trust your data?* was a great success with approximately 30 participants from government and industry taking the opportunity to network and hear about colleagues' achievements in managing geoscience data. The seminar was so well-received that the National Committee has already started planning another seminar about information management systems (think Trim, SharePoint etc.) – hopefully for Quarter 1 2014. A summary of the 2013 seminar presentations can be found on p. 3.

The AGM was held Thursday 31st October 2013 and all National Committee positions were filled. Since the 2012 revised Constitution had not been sent to the WA Department of Commerce in time for their ratification, the National Committee once again resides in Western Australia. The 2013 revision of the Constitution was accepted by the meeting and will be made available on the website once it has been approved by the WA Department of Commerce. One of the most significant changes is the move away from a state-based National Committee – AGIA hopes that in future years the National Committee will include members from around Australia.

AGIA GROUP DISCUSSIONS ON [®]

- No books here – a bookless Texan library
- Considering legislative restrictions on the geographical location of information in cloud storage

FROM THE NEWSLETTER EDITOR

A large thank you to all of the contributors to this edition of the newsletter:

- Des Tellis for providing his reflections on the life and career of the late Lee Parkin, a respected geoscience information colleague and longstanding Life Member of AGIA.
- Chris Nelson for his photographs of the Inauguration of the Federation Rocks Display at the National Rock Garden
- Seminar presenters for their permission to include photographs and items from their presentations for inclusion in the newsletter.

I encourage AGIA members from around Australia to share news of geoscience information events and developments in their state/territory. Articles for the GAB are warmly received!

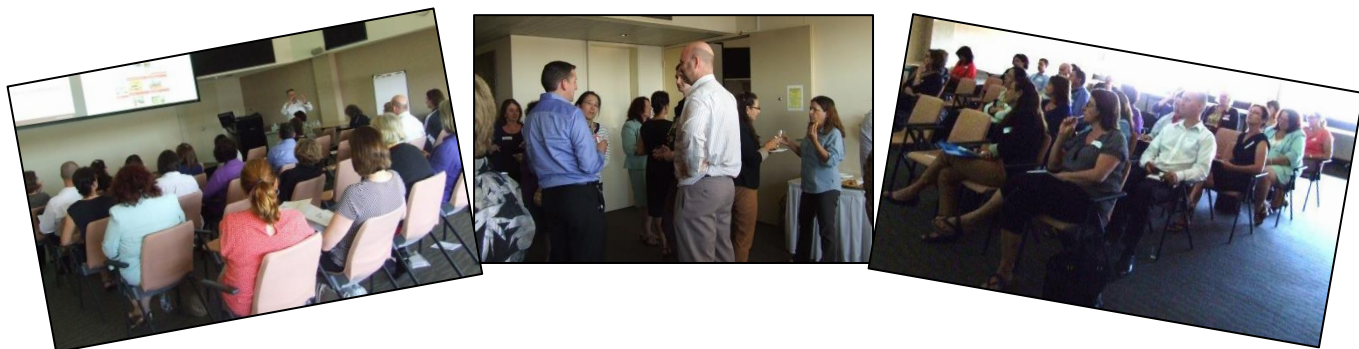
Wishing everyone a safe and happy festive season and a prosperous 2014. Happy reading!

Vanessa Johnson
Newsletter Editor

AGIA 2013 GEOSCIENCE INFORMATION SEMINAR: CAN YOU TRUST YOUR DATA?

The revival of the AGIA Geoscience Information Seminar was met with great enthusiasm with more than 30 people from government and industry organisations registering for the event. The presentations provided insight into the challenges and solutions associated with creating and maintaining trusted data - some challenges have been the constant companion of geoscience information professionals across the decades! The seminar also provided an enjoyable opportunity to network with colleagues during afternoon tea and sundowners.

Below is a summary of the presentations given by colleagues from the Geological Survey of Western Australia – presentations by Chevron Australia colleagues will follow in the next issue of this Newsletter. Thank you to Camille Peters for providing the photos and to the presenters who have supplied selected slides from their presentations.



GSWA/DMP DATA & SOFTWARE DOWNLOAD CENTRE "YOU CAN TRUST OUR DATA"

Stephen Bandy, General Manager, Geoscience Information, GSWA

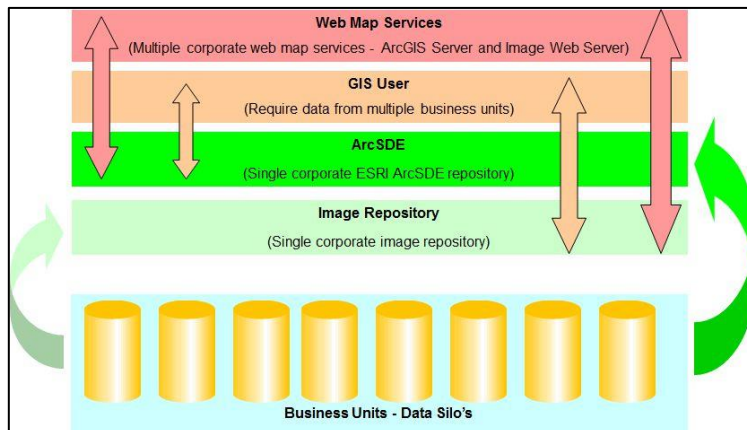


GSWA's data management architecture has undergone a transformation from data silos to an integrated data infrastructure. In 2004 each division of GSWA had its own collection of data, and its own data strategy. Between 2005 and 2007 GSWA divisions came together to develop an enterprise approach for the management of spatial data and infrastructure.

The new Spatial Data Infrastructure Project (SDIP) was developed to achieve three main goals: to improve access to

corporate geoscience data and research information, to create a single point of truth, and to normalize policies and practices around data management.

Stephen was asked about the challenges of bringing together the different divisions under SDIP. He stated that managing the technology to enable the restructure was the easy part – the greater challenge came from managing people through their changing roles and responsibilities. Extensive education programs for staff eased the change management process, and the support of a very enthusiastic



Director was crucial in encouraging broad-based acceptance of SDIP. Assigning custodians for external datasets was tricky, as was establishing data dictionaries and metadata.

Under the new infrastructure each division still takes care of its own data – they are the custodians responsible for quality control of data loaded to their databases. They are also responsible for providing metadata which includes information about the source and reliability/quality of the data. While each division is responsible for its own data, it is managed in one environment and provides information that then feeds into larger delivery systems such as web map services, online applications and data packages.

GSWA products such as books, maps, online systems and data packages draw on data housed within the SQL Server (aspatial data), the ESRI ArcGIS Server (spatial data) and the ESRI Image server (images). The interface between the databases has become so well-integrated that many ICT projects within DMP now take access to web map services for granted.

GSWA has developed an interoperable infrastructure which enables them to share access to geoscience information with other publicly funded organisations such as Geoscience Australia, CSIRO, and the WA Land Information System. They are also developing software to support mobile hardware.

Stephen was asked whether there had been a change in the type of staff recruited to manage spatial datasets. The short answer was yes. Where once the mapping divisions of GSWA had relied heavily on cartographers, there has been a steady increase in the proportion of staff members who are data and web services specialists.

GEOVIEW.WA DEMONSTRATION

Rick Rogerson, Executive Director, GSWA

Rick Rogerson's lively online demonstration of the GeoVIEW.WA interface focussed on the range of basic features and outputs which the 'average geologist' might require. Prefaced by tales of live demonstrations given in frontier locations with 'hot-wired' modems, Rick plunged into a geologist's tour of a selection of GeoVIEW.WA's functionalities which included:



- Spatial searching and visualization of data
- Quick and dirty map compiling – users can add their own polygons and text to maps generated from GeoVIEW.WA, and can also use an image cookie cutter (e.g. Snagit) to clip maps for insertion into reports and presentations
- Linking between GSWA databases e.g. Minedex, WAMEX
- Accessing reports, maps & data e.g. GSWA reports, historical tenement maps (these have been digitised from old hardcopy reports), geochronological reports and much more
- Exporting search results to CSV or ShapeFiles.

GeoVIEW.WA will soon have additional features:

- The Drillhole Database extracted from open file reports will soon be accessible on GeoVIEW.WA and the abridged land cadastre from Landgate will be added
- Tengraph is to be phased out and the tenement data will be migrated across to GeoVIEW.WA (currently the Geo.View tenement information is not as detailed as that available in Tengraph).



Rick Rogerson & Jenny Mikucki

WAMEX DEMONSTRATION

Ann Fitton, Manager, Mineral Exploration Information, GSWA

The West Australian Mineral Exploration Database (WAMEX) is populated with Mineral Exploration reports filed with the Department of Mines and Petroleum (DMP) to demonstrate that work commitments made under exploration permits have been met. The first report was submitted in 1957 and until 1999 only hardcopy reports were submitted. Between 1999 and 2006 a mix of hardcopy and digital reports were submitted and since December 2006 only digital copies have been accepted. Reports are subject to a period of confidentiality, after which they are released to 'open file' and accessible to the public. Almost 85,000 reports have been submitted, and of these 71,668 are open file and available via WAMEX. The complete open file dataset is available for download to portable hard drive from DMP's Perth Library and the Kalgoorlie office.

WAMEX has undergone a major renovation and the spatial search functionality has been improved. The new search is available via GeoVIEW.WA – simply go to Search Tools and choose WAMEX search. There are many search layers available - tenement, rectangle, co-ordinates, mapsheet and many many more.

GSWA runs free hands-on training days for its Online Systems. Places are limited and the sessions are scheduled according to demand.



Kerry Smith & Ann Fitton

AGIA AGM



AGIA members gathered at the Department of Mines and Petroleum in Perth on 31st October 2013 for the AGM. From left: Vanessa Johnson, Rae Davie, Kerry Smith, Lyn Trouchet, Camille Peters, Angela Riganti, Ray Smith, Liz Amann.

PRESIDENT'S REPORT 2012/2013

National Committee

President	Angela Riganti
Vice President	Jenny Mikucki
Secretary	Lyn Trouchet
Treasurer	Sandra Hayward
Membership Secretary	Kerry Smith
Newsletter & Media Coordinator	Vanessa Johnston
Committee member	Liz Amann
Committee member	Camille Peters
Committee member	Margaret Ellis
Committee member	Rae Davie (joined during the year)

Review of AGIA Activities for 2012/2013

Events

Over the past year AGIA has sponsored a series of events offering the opportunity to meet with colleagues and learn about current developments in the geoscience information field.

Christmas breakfast	11 December 2012	CBD restaurant
Easter breakfast	26 March 2013	BHP, City Square
This coincided with the launch of the redesigned AGIA website		
Winter warmer	11 June 2013	Bocelli's Espresso
Networking breakfast	9 August 2013	PPDM
Seminar	24 October 2013	Mineral House
Theme: Can you trust your data?		

AGIA also sponsored the second Australian Geoscience Teaching Workshop, organized by the Australasian University Geoscience Educators Network (AUGEN) and held in Townsville in January. The workshop discusses new teaching approaches, techniques, and strategies for the geosciences in a rapidly changing teaching environment at Australian Universities.



Constitution Review

Changes to the AGIA Constitution were discussed and amendments approved at the 2012 AGM (September 2012). Unfortunately, due to the missed deadline for submission to the Department of Commerce, the amendments could not become effective, and will be presented again at the 2013 AGM for the approval of members.

Communications

The position of Newsletter editor and Social Media Coordinator were amalgamated into the single role of Newsletter and Media Coordinator. The position is very ably filled by Vanessa Johnson, who has compiled 3 substantive issues of the *Great Australian Byte* (November 2012, April 2013, and October 2013) since the last AGM. Each issue contained a variety of informative articles, as well as reports on conferences and seminars attended by members. Contributions to the Newsletter from members or interested parties are always welcome.

Vanessa also devoted a considerable amount of time to redesigning the AGIA website (www.agia.com.au). The website has a more modern look and content is getting updated more frequently. Vanessa also continues to manage the LinkedIn AGIA discussion group, the statistics and discussion of which are documented in a separate report. All members are encouraged to contribute to the discussions and alert colleagues and interested parties to the existence of both our website and the LinkedIn discussion group.

A promotional flyer with information about AGIA is now complete, and is available on the website and to members, so that AGIA can be promoted at conferences and other events.

Australian Geoscience Council (AGC) matters

As a member society of the AGC, AGIA contributed to the underwriting of the 34th International Geological Congress that was held in Brisbane in August 2012. Thanks to the resounding success of the conference, the initial AGIA seed investment of \$500 returned a considerable sum, which will allow AGIA to sponsor more activities in the future (see financial report).

Earlier this year the Australian Government announced that it planned to introduce a \$2000 cap on work-related self-education expenses as part of tax reforms in the 2013 Budget. AGIA supported the AGC submission to the Australian Government Treasury Department opposing the proposed cap (July 2013).

Chris Nelson (Geoscience Australia) represented AGIA at an AGC Future directions workshop held in Canberra on 7 June 2013, as well as at the opening of the National Rock Garden (20 October 2013).

AGIA Seminar series

In October 2013 AGIA presented a half-day seminar with the general theme 'Can you trust your data?'. The seminar, the first held since 2007, was attended by 31 people (including speakers) from the mineral and petroleum sectors, academia, and government agencies.

Presentations focused on how government and industry geoscience organizations are creating, exposing and maintaining trusted data, and included live demonstrations of datasets available to the public:

Jenny Mikucki Chevron Australia's Subsurface Data Management Program



Stephen Bandy GSWA/DMP Data & Software Download Centre

Keith Hickey Managing and Visualizing Spatial Data from an A Class Reserve
[using GIS]

Rick Rogerson GeoVIEW.WA Demonstration

Rhonda Beaton Chevron's Information Governance Journey

Ann Fitton New WAMEX Demonstration

Feedback from attendees was positive, and more seminars will certainly be planned in the near future.

I would like to acknowledge the Department of Minerals and Petroleum for the use of their Theatre to host the seminar, and all the speakers for their contributions.

Occasional paper series

AGIA is currently working on the release of its Occasional Paper No 8 (Occasional Paper No. 7 was released in 1993). The paper, authored by Des Tellis, describes some of the important developments in the fields of geoscience information in Australia starting from the late 1960s to the present day, placing emphasis on the origins of the Australian Earth Sciences Information System (AESIS) and the Australian geoscience thesaurus (GeMPet), and the role of the Australian Mineral Foundation in their establishment.

I wish to thank all of our members who have supported our events and the committee members that have made those events happen, as well as all the contributors to our Newsletter. The committee would love to welcome some new members to contribute their energy and enthusiasm to the running of AGIA in the coming year, and I also would like to particularly thank those long-serving members who have been on the committee for a number of years. Ideas for events and activities from members are always welcome.

Angela Riganti
AGIA President 2012/2013

TREASURER'S REPORT 2012/2013

AGIA National Accounts for the financial year 2012-2013 were as follows:

Cheque Account

Opening Balance 01/07/2012	\$ 2,865.89
Less Payments	\$1,042.12
Plus Receipts	\$8,627.32
Closing Balance at 30/06/2013	\$10,451.06

Term Deposit

Opening Balance 01/07/2012	\$22,486.30
Interest for the Year ending 30/06/2013	\$1281.97
Further investments (nil)	\$0.00
Closing Balance at 30/06/2013	\$23,768.27



Comments:

The total balance of monies in AGIA (National) bank accounts is **\$34,219.33**;

For the Cheque Account, the balance at 30/06/2012 was \$2865.86, not \$3285.96 as reported in Sep 2012 at the AGIA AGM 2011-2012;

The discrepancy between 30/06/2012 (previous FY) and 01/07/2012 (this report) due to \$0.03 credit in interest on 01/07/2012;

Substantial one-off deposits were made during the year into the Cheque Account:

\$5,102.00 Return of investment and share of profit from the sponsored International Geological Conference 2012, administered by The AusIMM. The initial investment by AGIA, paid in 2009, was \$147;

\$1,335.00 Return of unused research monies from Curtin University;

The Term Deposit interest accrued was more than for the similar period 2011-2012 (\$846.17). The interest rates have remained low and a similar or lower yearly interest credit is expected for the 2013-2014 period. The best rates are currently offered for short terms of 3-4 months, so the Term Deposit is being renewed 3-4 times yearly;

No monies were transferred from the Cheque Account to the Term Deposit during the year; and

The Accounts for the financial Year 2012-13 are about to be submitted to the auditor. The auditor's report will be tabled at the committee meeting following receipt of the report.

Sandra Hayward
AGIA Treasurer

MEMBERSHIP REPORT

Last year I reported that the membership of AGIA was creeping up but this has not been the case for this year. As of 30 September 2013 there were 39 members on the books and the data for the renewals for 2013-14 can be seen below. It needs to be remembered that the high numbers in 2005-6, 2006-7 were due to "member discounts" for seminar/s held during those periods. Additionally, corporate membership while greatly appreciated, can deter individuals from joining as, while the AGIA Constitution only allows one representative from that corporation, other staff do ride on the corporate membership coat tails.

Renewal reminders for 2013-14 were sent as follows with renewals as shown. The final date to renew memberships was 30 September.

38 renewals sent (personal and corporate members), with 34 renewals: 23 current personal members plus one new "retired" membership and 9 Corporate members.

One re-admitted member has been received since September 30, giving 25 personal members. One of the 5 Life members passed away 18 October 2013.

All corporate memberships were renewed.

6 personal members have not renewed.



MEMBERSHIP YEAR	CORPORATE	PERSONAL	STUDENT/ UNEMPLOYED/ RETIRED	OVERSEAS	LIFE	TOTAL
2012-13	9	22	3	0	5	39
2011-12	9	32	2	0	4	48
2010-11	8	26	3	0	4	41
2009-10	9	32	2	0	4	47
2008-09	11	32	2	0	4	49
2007-08	11	28	2	0	4	45
2006-07	12	39	2	0	4	57
2005-06	16	43	2	0	3	64

Dr Kerry Smith
Membership Secretary

PROJECT REPORT

Kerry Smith reported that due to her recent retirement from academia, the Geoscience Project went into recession during the year but has now started up again. The survey for the GeMPet section of the project will be tabled at the next committee meeting for final comment from the Committee.

NEWSLETTER, WEBSITE + SOCIAL MEDIA REPORTS

Newsletter

There have been three issues of the Newsletter since the last AGM:

- October 2013 – Vol. 14(2)
- April 2013 – Vol.14(1)
- November 2012 – Vol.13(2)

eCopies of the Newsletter are available via the AGIA website, and the National Library of Australia has been advised of their publication. Digital copies are also backed-up in AGIA's Dropbox account. Thanks go to Kerry Smith for forwarding copies of the newsletter to the membership.

Articles have included:

- SA Branch News
- PPDM 2013 Perth Data Management Symposium
- AGC votes to re-join STA
- AGIA Occasional papers – can you help?
- AGIA Easter Breakfast & Website Launch
- Geoscience Information 101 Seminar
- 2013 AGLTN Workshop Wrap-Up
- USGS National Geologic Map Database
- AGIA Christmas Breakfast 2012
- AGIA's New Life Member – Kerry Smith
- National Rock Garden



- AGIA AGM
- 34th International Geological Congress: a report back from the AGIA president
- Review of the use of Apple iPad for general corporate use
- The role of information professionals in geoscience data management

I encourage AGIA members to contribute articles to the newsletter as it provides an opportunity to provide a more detailed reflection on issues of interest than is possible via the website or LinkedIn. Pictures and illustrations to accompany articles are also very welcome.

Website

The new AGIA website was officially launched at the Easter Breakfast on 26 March 2013. The website is managed via the Wordpress platform which provides a very user-friendly back end. New page architecture was created and this will continue to develop as the membership's needs change. Much of the content from the old website was adapted and distributed across the new page architecture, and new content added.

Prior to the new website going live, the National Library of Australia archived the original website as part of the Pandora Project, and the original website files were downloaded and saved to portable media for safekeeping.

To support the website two new applications have been deployed: StatCounter to gather usage statistics and Dropbox to store large and/or precious digital records. More applications and plugins will be deployed as the need/demand arises.

Figure 1: Monthly Statistics at 28 October 2013

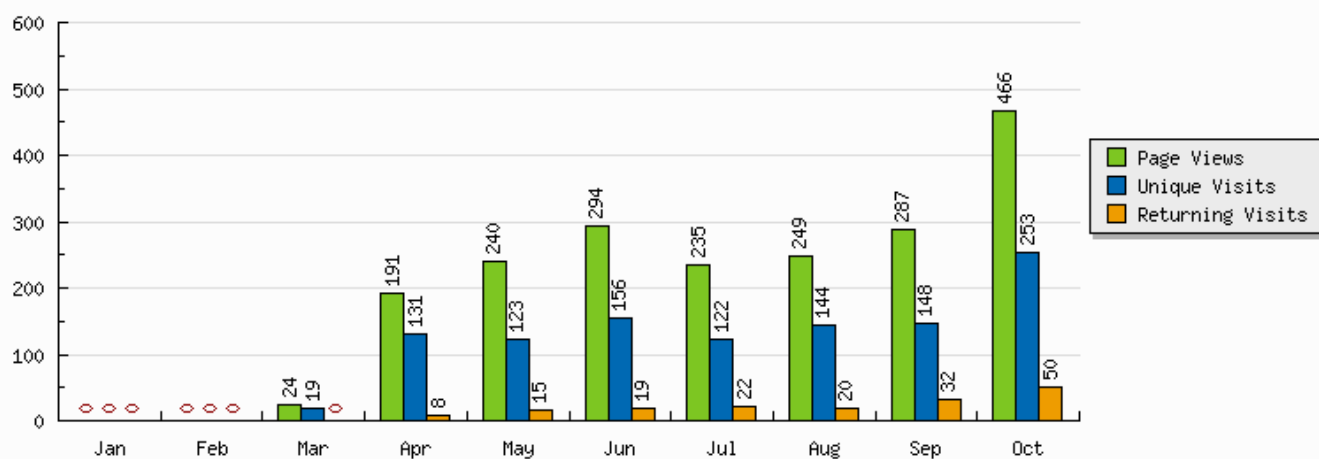


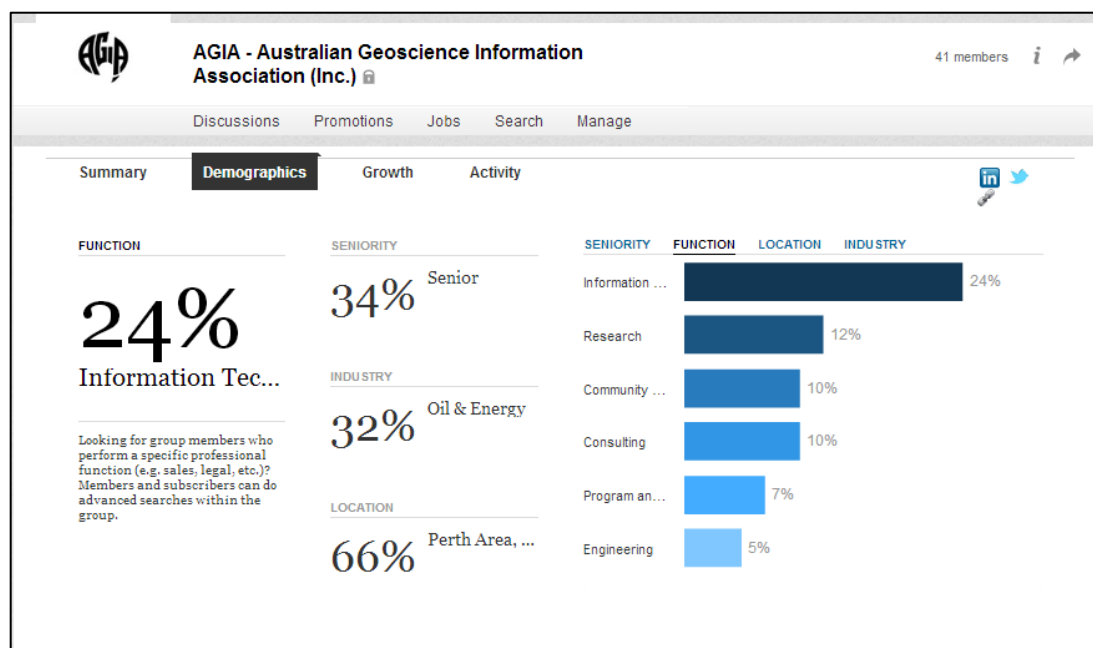
Figure 1 shows website usage statistics. The most useful statistic is *Unique Visits* which average around 150 per month. In terms of page hits, the home page is the most popular, followed by Events, Publications and Resources. At the request of the membership, further work on the content and structure of the Resources page is planned. The website is backed-up via the WestNet Hosting Panel on a regular basis.



Social Media Report

The LinkedIn membership has grown from 25 to 41 members during the past year. As shown in Figure 2 below, Information Technology is the dominant member function, followed by Research, Community & Social Services, Consulting, Program & Projects and Engineering. The LinkedIn membership is mainly Perth-based, more than a third occupy senior roles and the Oil & Energy sector is well represented.

Figure 2: LinkedIn Group Statistics at 28 October 2013



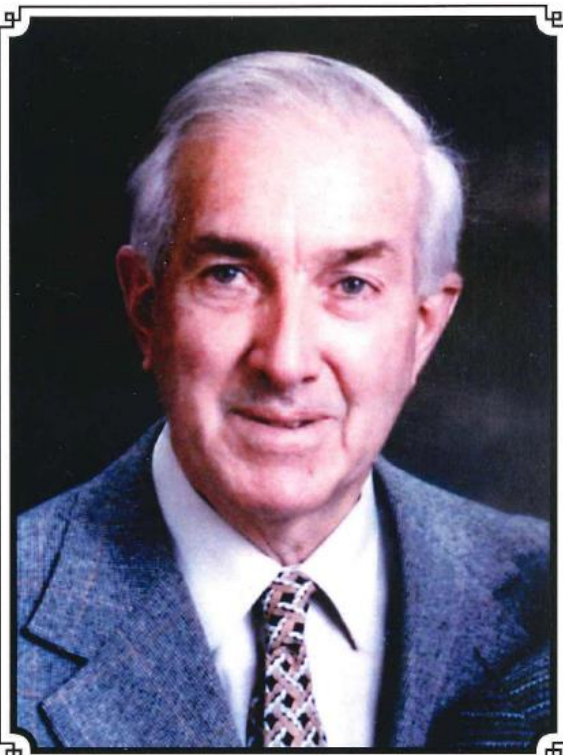
Some of the most popular topics of discussion have included:

- The role of information professionals in geoscience data management – journal article
- Geoscience Librarianship 101
- Thomson Reuters Data Citation Index
- UNESCO paper: Economics of long term digital storage
- SharePoint for library catalogues
- ANDS guide to digital file formats
- Scrap the cap on self-education expenses
- Separated At Birth: Library and Publisher Metadata

I strongly encourage members to initiate and participate in discussions.

Vanessa Johnson
Newsletter Editor

VALE L. W. (LEE) PARKIN AO (1916 -2013)



It is with profound sadness that we record here the death on 18th October 2013 of a distinguished Australian geoscientist and AGIA's founding and life member Lee Parkin.

Leslie Wedgwood Parkin was born on 15 April 1916 in Chatswood, Sydney, to the Reverend L. C. Parkin and his wife Dorothy, the second of their five children. The family moved to South Australia when his father was appointed to the Brougham Place Congregational Church in North Adelaide. Lee schooled at King's College (now Pembroke School) from the day it opened in 1924 and went on to be Head Prefect and Dux of the college in 1933 and was a good sportsman in his day. He kept his affiliation with his alma mater in various capacities for the rest of his active life.

He obtained a degree in Geology from the University of Adelaide as a cadet under Professor Sir Douglas Mawson and completed further degrees in Mining Engineering at the South Australian School of Mines and later at the Broken Hill Technical College during the time of his first employment, which was with North Broken Hill Ltd.

At University he met Jean Wilson, one of Adelaide University's first female law graduates, and they were married in January 1940.

He joined the South Australian Department of Mines in 1950 and spent much of the rest of his professional career with the department moving up to Chief Geologist, Deputy Director of Mines and ultimately Director of Mines before resigning to take up the position of inaugural Director of the new Australian Mineral Foundation (AMF) in January 1972.

At the Department he made major contributions to the study of the Leigh Creek coal fields and to uranium mining at the Radium Hill uranium mine, making a trip in 1953 to the USA to investigate developments in nuclear power. The Department's database has 70 records attributed to his authorship, a major one being as Editor of the *Handbook of South Australian geology* published in 1969. He was a member of numerous State councils and statutory institutions and instrumentalities, serving terms as a Director or Chairman of many of them.

Lee's professional affiliations, amongst many others, covered The Australasian Institute of Mining and Metallurgy, where he was a member for 76 years and was awarded an Honorary Fellowship in 2005; the Royal Society of South Australia, of which he was President in 1958 and was awarded their Verco Medal in 1972 and an Honorary Fellowship in 1982; and the Geological Society of Australia of which



he was the inaugural recipient of the Bruce Webb medal for outstanding service to the Society.

On the national plane, he was awarded an Order of Australia on Australia Day 1983 for services to mining and geology in Australia.

His immense contribution to the field of geoscience information in Australia is not well known in the wider geoscience community. As Director of AMF he developed and implemented the Foundation's highly successful programme of continuing education through its innovative workshop course model and through seminars and conferences. His leadership and vision in accepting the creation, development and management by AMF of the Australian Earth Sciences Information System (AESIS), and the *Australian Thesaurus of Earth Sciences and Related Terms*, notwithstanding the tentative environment of the times, made these two undertakings possible. His personal subject knowledge and prodigious work ethic sustained these projects through most of their life time. His major contribution to geoscience information in Australia, however, must certainly remain his marathon feat of indexing some 60,000 of the 200,000 records in AESIS, and his reviews of over 2500 books for AMF's Informative Book Review Programme, plus his major part in the compilation of the *Australian Thesaurus of Earth Sciences and Related Terms*. His systematic, analytical indexing and succinct annotations gave AESIS much of the quality for which it was noted, and his very readable book reviews contributed to the acquisition of contemporary literature from the leading scientific publishers around the world that, in large measure, made the AMF library one of the best geoscience libraries in Australia. In the case of the thesaurus, without his breadth of knowledge and logical mind his co-compiler acknowledges that it would not have been possible for AMF to produce such a major reference work.

Lee Parkin was a leader with presence who led by example and in his days as a public servant was concerned very much with service. An engaging speaker with a well-modulated voice he had a gift for the timing of a punch line and could also readily trade a yarn with the best of blokes. A democratic socialist at heart he believed in a fair days wage for a fair days work. He, however, never let his political philosophy interfere with his professional judgement. He was very accommodating of disparate views and always considerate in dealing with the work problems of his colleagues. He was a caring family man and quietly very proud of the many not insignificant achievements of his family members. He was an exemplary Australian citizen who served his community, his church, his profession and his country with outstanding merit and, with his wife Jean, did his bit for care of the environment as well.

Lee Parkin chaired the inaugural meeting at which AGIA was formally created on 23 August 1976 during the 25th International Geological Congress in Sydney. It was perhaps most fitting then that in 1991, after 15 years of sterling contribution to geoscience work in Australia, he was made the first Life Member of AGIA and in the same year awarded the Association's first Certificate of Recognition.

Des Tellis

INAUGURATION OF THE FEDERATION ROCKS DISPLAY, 20TH OCTOBER 2013

Chris Nelson of Geoscience Australia attended the Federation Rocks Inauguration Ceremony on AGIA's behalf and provided the images for this picture story. You can read about the ceremony (and the rocks) in the October edition of the [National Rock Garden Newsletter](#)



After the Welcome to Country, ANU Professor of Geology & Chair of the National Rock Garden Brad Pillans and ACT Chief Minister Ms Katy Gallagher unveiled the key stone.



Children enjoyed show bags (each including a rock sample) and clambering over the rocks.



ROCK STARS

VICTORIA Bendigo metasediments

AGE: Ordovician to Silurian, 450-400 million years

LOCATION: Bendigo

FORMATION: The rock is a complex mixture of fragments of metamorphic rocks, with fossiliferous sandstone and shale. This rock contains small, dark, siliceous nodules and small grains of quartz that formed from the fluids that were expelled from the rocks.

SIGNIFICANCE: The rock is a good example of the Bendigo Metasediments, which formed near the end of the Silurian period, around 400 million years ago.

Donated by the Government of Victoria and the City of Bendigo

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SOUTH AUSTRALIA Orroroo Metasomites

AGE: Proterozoic, 1700 million years (deposition of sediment) to 1575 million years (alteration)

LOCATION: Orroroo, Yorke Peninsula

FORMATION: The heat and fluids from granite intrusions formed this distinctive calc-silicate gneiss from calcareous sedimentary rocks. The colourful minerals include epidote, actinolite and diopside (green); feldspar and hornblende (orange and red); and magnetite (black). Quartz-diorite veins include pyrite and copper-bearing chalcopyrite.

SIGNIFICANCE: This spectacular and valuable Hawkesbury Bluestone is a widely reported decorative stone but it also expresses the geological event that formed the great Olympic Dam orebody and the historic Mount Orroroo copper mines. Its geological history guides further mineral exploration.

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QUEENSLAND Chinaman Creek Limestone

AGE: Devonian, 380-400 million years

LOCATION: 200 km west of Townsville

FORMATION: This limestone was formed from calcareous mud that accumulated in a shallow, shallow marine environment on the east of Australia's continental margin. It contains abundant fossil remains, corals, sponges and brachiopods, including what are giant megacrinoid stems, many of which are preserved in their upright growth position.

SIGNIFICANCE: The Chinaman Creek Limestone can be regarded as a Devonian precursor of the Great Barrier Reef. Chinaman Creek is a world-class natural feature. A spectacularly preserved fossil, it is being prepared as a natural monument.

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WESTERN AUSTRALIA Banded Iron Formation

AGE: Archaean-Proterozoic, 2730-2450 Ma

LOCATION: Pilbara region

FORMATION: This rock was deposited from dissolved ferrous iron in the circulating waters of an early global ocean under a reducing atmosphere. The alternating bands show the marine environment sea-sawing between oxygen rich (dissolved iron precipitated) and oxygen poor (silica precipitated), as the activity of early cyanobacteria varied.

SIGNIFICANCE: It is the distinctive, spectacular precursor of the primary iron ore deposits of the Pilbara region, which are the world's largest concentration of iron ore.

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NEW SOUTH WALES Hawkesbury Sandstone

AGE: Middle Triassic, 220-240 million years

LOCATION: Pyramul, Sydney

AGIA'S WA MEMBERS & GUESTS CELEBRATE THE FESTIVE SEASON



AGIA WA Members and their guests enjoyed a gourmet breakfast at The George in the heart of Perth's CBD - a great turnout with lively conversation!



QC'ing the bon bon jokes





UPCOMING EVENTS

- 3rd Australasian University Geoscience Educators Network (AUGEN) meeting, QUT Brisbane, January 2014
- [GSWA Open Day](#) 21 February 2014
- [NTGS 15th AGES Conference](#) 18-19 March 2014, Alice Springs
- SLA 2014 Annual Conference & Info-Expo, 8-10 June 2014, Vancouver Canada
- [Australian Earth Sciences Convention](#), 7-10 July 2014, Newcastle
- [PPDM Perth Data Management Conference](#), 6-8 August 2014, Perth
- [ALIA National Conference](#), 15 - 19 September 2014, Melbourne (Includes Special libraries - Research data & impact, digital repositories)
- [11th Annual iPRES Conference](#) on Digital Preservation, 6-10 October 2014, State Library of Victoria, Melbourne
- Ninth International Conference on Open Repositories, [OR2014](#), 9-13 June 2014, Helsinki, Finland
- [IFLA 2014 Satellite Meeting](#) - Linked Data in Libraries: Let's make it happen! August 14 2014, Paris, (main conference in Lyon)



WEBSITES & MAILING LISTS OF INTEREST

- **AUGEN** www.geoscience-education.edu.au
- **GeoEdLink** [subscribe](#), [archives](#)
- **Australian National Data Service (ANDS)** <http://ands.org.au/>
- **WAIN** mailing list [subscribe](#)
- **NTGS Update** [subscribe](#)
- **WA DMP eNews** [subscribe](#)



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