

# THE VICTORIAN GEOLOGIST



April 2014

THE GEOLOGICAL SOCIETY OF AUSTRALIA

Victoria Division

Annual General Meeting

Thursday 24th April at 6:15 p.m.

## **Linking mineral systems with geodynamics and tectonics - a 'whole of geology model' to the establishment of a geological history**

**Dr Laurie Hutton**

**President of the Geological Society of Australia**

**Fritz Loewe Theatre, School of Earth Sciences, University of Melbourne**

Talks will be preceded by drinks from 5:30pm in the 4th floor tearoom, cost \$2.

The Mount Isa Province, in northwest Queensland, is one of the most intensely mineralised terrains in the world. The various styles of mineral endowment present in the province leads to the juxtaposing, both spatially and temporally, of multiple world-class mineral deposits, with different styles and related to different tectonic settings. The Mount Isa mine for example, contains a world-class Pb–Zn orebody, formed in a late sedimentary or early diagenetic setting, in the same mine as a world-class Cu orebody, formed during the Isan Orogeny about 100 My later. An understanding of the different regimes for these two deposits is critical to understanding the mineralisation in the inlier.

The Paleoproterozoic rocks in Mount Isa Province developed in a succession of three extensional basins, the Leichhardt Superbasin, the Calvert Superbasin and the Isa Superbasin, separated by periods of relaxation of extensional stress, with only local compression. These basins are developed on a thick Archean to early Paleoproterozoic crystalline basement. Sedimentation ceased close to the end of the Paleoproterozoic and was followed during the Mesoproterozoic by several compressive and metamorphic events which together make up the Isan Orogeny. Recent interpretations suggest that early compression in the Isan Orogeny was coeval with continuing sedimentation, particularly in the Lawn Hill Platform in the northwestern part of the province.

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**...ABSTRACT CONTINUED**

Mineralisation mostly falls into two broad categories:

- Pb–Zn mineralisation linked to saline fluid being drawn down during graben formation during superbasin formation followed by expulsion of Pb–Zn bearing fluid during relaxation. The relative impact of graben-phase sedimentation and sag-phase sedimentation is related to heatflow in the crust during extension and can be shown to vary across the province. Major structures and mineral deposition occurs at the boundaries of different heat flow regimes, and their character is closely related to the different regimes.
- Cu–Au mineralisation is linked to expulsion of deeper seated fluids during region-wide compression related to the Isan Orogeny. Many of the structures developed during the early dynamic events were reused by deep-seated fluids causing overlap of mineralising events with widely different styles.

The Mount Isa terrain provides an opportunity to link different geological disciplines into a coherent model. Failure to understand how the disciplines interact can lead to erroneous interpretations which do not fit all of the available data.

A better understanding about the tectonic and geodynamic forces which shaped the Mount Isa Province.

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**SPEAKER BIO**

Laurie Hutton graduated from the University of Queensland in 1972, completing honours the following year. Since then he has been involved in regional geological mapping in Queensland. Since 1975 he has been involved in the geological mapping programmes at Mount Isa, the Atherton region, Mount Coolon, Charters Towers and Anakie. In 2004, he was awarded a Doctor of Philosophy for a thesis on mapping in the Pentland area of Queensland. He has specialised in the geochemistry and petrology of igneous rocks.

From 2004-2009, he was involved in remapping of the Mount Isa terrane utilising the latest geophysical images, including deep crustal seismic profiling. In 2010 Laurie led a team putting together a second edition of the popular North West Queensland Mineral & Energy Study which was released early in 2011.

From 2011 to 2013, Laurie has been involved in managing a group charged with exploration Attraction of investors in Queensland. Laurie is currently a Principal Geoscientist in the Minerals area of the GSQ. His interests at the moment include looking at prospects for Rare Earth Elements and Critical elements in Queensland .

Laurie is currently the President of the Geological Society of Australia.

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**ANNUAL GENERAL MEETING**

The Annual General Meeting for the GSAV will be held this month, April 24th, at the School of Earth Sciences, University of Melbourne.

The GSAV AGM coincides with a lecture from Dr Laurie Hutton, the incumbent President of GSA. Laurie will speak on linking mineral systems with geodynamics and tectonics - a 'whole of geology model' to the establishment of a geological history.

All positions are open for nomination and listed below. The GSAV encourages 'new blood' for the committee and welcomes any and all nominations for the positions listed below.

Available Positions:

Chair	Melbourne University Representative
Vice-Chair	Monash University Representative
Secretary	Newsletter Editor
Treasurer	Investments Administrator

**2014-2015 GSAV Committee Nomination Form**

I nominate:

For the position of:

Nominator:

Seconded by:

All nominations will be presented and voted upon at the GSAV AGM on 24th April, 2014, commencing at 6:15 pm.

Please detach and mail this completed form specifying your 2014-2015 GSAV Committee nomination no later than 18th April to:

The Geological Society of Australia Inc. (Victoria Division)  
GPO Box 2355, Melbourne VIC 3001

**Alternatively, bring your completed form along to the meeting.**

## ANNUAL GENERAL MEETING

### 2014 Annual General Meeting of the Victoria Division of the Geological Society of Australia Notice of Meeting

*The 2014 Annual General Meeting of the Victoria Division of the Geological Society of Australia will be held at 6:15 p.m. on Thursday 24th April 2014 in the Fritz Loewe Theatre at the University of Melbourne (to be followed by an address from Dr Laurie Hutton, President – GSA).*

*David Cantrill will present his Chairman's Report for 2013 – 2014 and the meeting will elect a new Geological Society Victoria Division Committee for 2014 – 2015.*

#### Agenda

1. Minutes from 2012–2013 of the GSA Victoria Division AGM on Thursday 2nd May 2013.
2. GSA Victoria Division Chairman's Report for 2013–2014
3. GSA Victoria Division Financial Report for 2013–2014
4. Bicentennial Gold 88 Endowment Report for 2013–2014
5. Heritage Subcommittee Report for 2013–2014
6. Awards Committee Report for 2013–2014
7. Election of Committee Members for 2013–2014
8. Call for nominations of a Divisional Councillor to the Governing Council
9. Other business.

A. Seymon

Secretary of the Division, 6th April 2014

#### **Minutes of the 2013 GSA Victoria Division Annual General Meeting**

Opening: time and place

- a. The meeting opened at 6.30 pm on Thursday 2nd May 2013 in the University of Melbourne Fritz Lowe Theatre
- b. Apologies: David Moore

#### **1. Minutes of the previous meeting on Thursday 26th April 2012**

- a. Minutes were taken as read. Moved: Stephen Gallagher; seconded: Susan White.

#### **2. Chairman's report for 2012-2013**

- a. David Cantrill presented his Chairman's Report for 2012 – 2013. His address included summaries of the Bicentennial Gold; Heritage and Awards reports.

#### **3. Treasurer's report for 2012-2013**

- a. Barbara Wagstaff reported that the GSAV accounts were no longer audited by the GSAV accountant. This is now a Federal Division responsibility. Gerhard Krummei: questioned who and why initiated this. DC: Responded that there is a legal need from the Incorporations Act – GSA was non-compliant. He added that there are no implications for the security of the GSAV funds. GSAV is one of the only groups that manage their own funds.

## ANNUAL GENERAL MEETING

- b. Barbara noted that with regard to book stocks, sales of Geology of Victoria are winding down. It was suggested that it may be time to think about a new edition.
- c. Barbara noted that the Division had spent less on scholarships to students. GK noted that the income from the Selwyn was \$4k, whilst expenses were \$9k – leaving a deficit of \$5k. The justification from BW was that student attendance was high (and subsidised) and quality speakers from out of Victoria were sourced. DC showed the investment graph and read out DM's statement. He highlighted the plan to reinvest the franking credits and use them for student awards.
- d. The report was moved by Matthew Bliss and seconded by Gerhard Krummei.

### 4.-6. Various committee reports

- a. Reports were addressed by the Chairman (see item 2. a.)

### 7. Election of the Victoria Division Committee for 2012 – 2013

- a. The following members of the Victoria Division were elected or appointed to form the Division's Committee for 2013 – 2014:

#### Division Officers

Chairman	David Cantrill
Secretary	Adele Seymon
Treasurer	Barbara Wagstaff

#### Division Committee Members

David Cantrill	Division Chairman
Vacant	Division Vice Chairman
Adele Seymon	Division Secretary
Barbara Wagstaff	Division Treasurer
Ingrid Campbell	Division Awards Subcommittee Chairman
David Moore	Division Investments Administrator
Matthew Bliss	Division Newsletter Editor
Matthew Bliss	Melbourne University, ESPG (Earth Sciences Postgraduate Group)
Amir Mahmud	Monash Student Representative
Lindsay Thomas	Division Webmaster
Noel Schleiger	Division Education Subcommittee Chairman
Shannon Burnett	Division Education Subcommittee Assistant
Susan White	GSA Heritage Committee Chairman

#### Affiliates

Gerhard Krummei, Bicentennial Gold 88 Working Group Chairman

### 8. Any other business

- a. Mike Hall made a request for field trips, noting the potential to combine with PESA (who have run two field trips over the last 18 months). GK commented that this could attract membership through interest from students.

#### Closure

- b. The meeting closed at 6.40 pm.

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## CHAIR'S REPORT

This year has seen a full program of talks on the last Thursday of the month, talks that included highlights such as the Selwyn lecture by Ray Cas. However, attendance has been patchy with several meetings being attended by just a handful of people (mainly committee members). This prompted us to survey the members for views on whether the committee was providing the sorts of activities that members wanted. The response to the survey was underwhelming to say the least, with less than 5% response rate. Indeed the response prompted a long discussion about whether we shifted to a quarterly meeting or some other format that would see greater participation. It is still not clear whether members want to engage in evening lectures or whether reduced frequency would see greater participation. We have also discussed changing times to a day time slot or combining activities with other groups such as AusIMM.

The finances of the division are healthy and the investment portfolio has been performing well. This has enabled us to award a record number of travel grants to support students' attendance at conferences. These awards have been named in honour of Noel Schleiger, who served the Division for many years in the education role until his passing in 2013. The committee also took advantage of the offer to fund match by the Federal Division for schools education programs. The division put up \$5000, (matched by the Federal Division) to be used for professional development of teachers.

Current stocks of Geology of Victoria are running low with only a few more years of books left in stock. The committee asked Bill Birch to come to a meeting to talk about his experiences in editing the last edition, and also to gauge the amount of work and cost required to produce a new volume. Some scoping work will have to be done to identify what needs to change and where the critical advances in our understanding of the geology of Victoria. The Committee would be interested to hear members' views on a new edition. One thing that we have talked about is the need to make it available as an e-book perhaps with individual chapters available for sale rather than the whole volume.

The Division, and indeed the Society, relies on voluntary contributions of time made by committee members. It is important to recognise this contribution but just as important to recognise that the committee and the society benefits from continual renewal. At the federal level this is achieved by a rotation of councillors from the divisions on the governing council. It is the Victorian Division's turn to provide a councillor and they will be elected at the AGM. Equally it is important that the committee at the divisional level is renewed and several of the committee members have indicated that they wish to rotate off the committee either this year or next. So I am asking for members to put their hand up to help renew the committee so that it is best able to serve the Division.

David Cantrill  
Chair, GSA Victorian Division

<b>TREASURER'S REPORT</b>
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**GSA Victoria Division BALANCE SHEET 2013**

Balance sheet as at the 31 December 2013

<b>CURRENT ASSETS</b>	<b>2013</b>	<b>2012</b>
<b>Cash and equivalents</b>		
Cash at bank NAB	\$14,608.78	\$3,653.07
Cash at bank Bank of Queensland a/c#998752674	\$14,386.48	\$23,328.41
<b>Cash receivable</b>		
Publications	\$4,054.42	\$2,536.50
Capitation fees	\$3,435.00	\$3,660.00
Other debtors-franking credits receivable	\$2,694.56	\$4,882.29
<b>Stock on hand 31st December</b>		
Selwyn Symposium 1996	\$22.00	\$22.00
Selwyn symposium 1999	\$16.00	\$30.00
Selwyn symposium 2007	\$704.00	\$720.00
Extended abstracts: Selwyn symposium 2008	\$306.00	\$323.00
Extended abstracts: Selwyn symposium 2009	\$660.00	\$690.00
Extended abstracts: Selwyn symposium 2012	\$430.00	\$450.00
Geology of Victoria	\$26,064.28	\$29,910.90
<b>Total stock</b>	<b>\$28,202.28</b>	<b>\$32,145.90</b>
<b>Interest Bearing Securities</b>		
Australian Foundation Investment Company Unsec.Red.Conv Notes	\$11,805.00	\$11,170.00
ANZ Banking Group Limited Convertible Preference Shares (CPS3)	\$10,275.00	\$10,190.00
Macquarie CPS Trust	\$22,084.80	\$11,678.25
National Australia Bank Income Security	\$15,663.90	\$15,225.00
Westpac Banking Corporation-Unsecured Deferred Settlement Notes	\$20,670.00	\$20,170.00
Westpac Stapled Preferred Security11	\$19,812.00	\$19,987.50
Woolworths WOWHC	\$2,194.71	\$2,231.46
<b>Shares in listed companies</b>		
ASX limited	\$18,380.00	\$-
Aurizon Holdings Ltd	\$16,201.60	\$-
Australian Foundation Investment Company Ltd	\$51,781.50	\$41,958.00
AIX Australian Infrastructure Fund Limited	\$68.64	\$42,690.97
BHP Billiton Ltd	\$38,331.91	\$37,433.90
Commonwealth Bank of Australia	\$51,970.40	\$41,536.24
CSL Limited	\$11,033.60	\$8,624.00
National Australia Bank Ltd	\$52,245.00	\$37,500.00
Wesfarmers limited	\$14,357.04	\$12,160.50
Woolworths Limited	\$25,049.00	\$21,704.20
<b>Property</b>		
Investa Office Fund	\$15,650.00	\$-
Shopping Centres Australasia Property Group	\$-	\$222.00

<b>TREASURER'S REPORT</b>
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<b>Total Assets-Net Assets</b>	<b>\$464,955.62</b>	<b>\$404,466.19</b>
<b>Gain/Loss in value of investments/assets</b>	<b>\$60,489.43</b>	<b>\$63,612.42</b>
<b>MEMBERS FUND</b>	<b>\$464,955.62</b>	<b>\$404,466.19</b>

**Profit and Loss Statement for the year ended 31 December 2013**

	2013	2012
<b>Income</b>		
Capitation fees	\$6,046.50	\$4,465.50
Franking Credits	\$9,335.00	\$12,416.36
GST reimbursement	\$725.97	\$937.26
Income from Selwyn Symposium 2012	\$-	\$4,080.00
<b>Profit/(loss) on disposal of investments</b>		
AIX Australian Infrastructure Fund stapled securities	\$-	\$2,640.00
Sonic Healthcare	\$1,771.00	\$-
<b>Bank Interest</b>		
Bank of Queensland a/c#998752674	\$690.34	\$367.51
Equity income		
ASX Australian Securities	\$411.50	\$-
Aurizon Holdings	\$272.24	\$-
Australian Foundation Investment Company Ltd	\$1,831.50	\$1,748.25
AIX Australian Infrastructure Fund stapled securities	\$1,871.31	\$1,861.33
BHP Billiton Ltd	\$1,210.15	\$1,071.10
Commonwealth Bank of Australia	\$2,431.52	\$2,231.12
CSL Limited	\$169.02	\$132.80
National Australia Bank Ltd	\$2,850.00	\$2,700.00
Sonic Healthcare	\$287.50	\$-
Wesfarmers limited	\$2,850.00	\$544.50
Woolworths limited	\$984.20	\$932.40
<b>Interest Bearing Securites</b>		
Australian Foundatation Investment Company Unsec.Red.Conv Notes	\$625.00	\$438.36
ANZ Banking Group Limited Convertible Preference Shares (CPS3)	\$441.50	\$501.58
Macquarie CPS Trust	\$1,175.83	\$1,922.61
National Australia Bank Income Security	\$872.00	\$1,127.76
Westpac Banking Corporation-Unsecured Deferred Settlement Notes	\$1,132.28	\$321.12
Westpac Stapled Preferred Security11	\$908.36	\$1,343.87
Woolworths WOWHC	\$129.00	\$153.92
<b>Property</b>		
Shopping Centres Australasia Property Group	\$-	\$105.04
<b>Gross profit/loss from trading</b>	<b>\$39,021.72</b>	<b>\$46,819.64</b>

## TREASURER'S REPORT

### Expenditure

Bank charges	\$178.50	\$231.60
Conference expenses	\$-	\$9,067.51
Educational outreach	\$6,748.00	\$490.00
Investment commission	\$747.74	\$110.00
Major purchases-medals	\$-	\$-
Meeting supplies etc.	\$537.48	\$399.88
Meetings-other costs	\$350.60	\$40.30
Newsletter printing	\$1,120.00	\$981.80
Newsletter posting	\$186.00	\$340.95
Other postage, printing and stationary	\$-	\$443.29
Prizes to students and grants	\$9,996.00	\$7,600.00
Storage facility	\$934.00	\$461.00
Transfer to investment account	\$-	\$12,000.00
<b>Total expenditure</b>	<b>\$20,798.32</b>	<b>\$32,166.33</b>
<b>Operating Profit/loss</b>	<b>\$18,223.40</b>	<b>\$14,653.31</b>

Barbara Wagstaff  
GSAV Treasurer

## SHARES REPORT

The investment portfolio continued to grow over the calendar year, with a total increase in value of \$78,950, comprising \$73,000 in portfolio value and \$5,950 in imputation credits. This is a 24% increase on the value at the end of 2012 (\$333,404), and consolidated our gains in the post-global financial crisis world. At the end of 2013 the portfolio stood at \$396,405, not including another \$3,860 of franking credits and after subtracting the \$10,000 taken from the portfolio to fund the Division's activities.

The gains were widespread. Australian Foundation (up 26%), CSL (up 36%), Commonwealth Bank (up 25%) and the National Bank (up 40%) were the better performers, but most shares and notes gave us a net positive return. We were forced to sell our holding in Australian Infrastructure as it was taken over by the Commonwealth Government's superannuation fund, but this resulted in a profit of approximately \$22,000.

Our strategy remains what we feel is a conservative one; approximately 2/3 is invested in a broad range of what are considered to be high quality businesses (mostly but not exclusively in the ASX 200). Apart from those listed above, we presently have shares in the ANZ Bank, the Australian Stock Exchange, Aurizon Holdings, BHP Billiton, Wesfarmers, Westfield Group, Westfield Retail Trust and Westpac Bank. The remaining 1/3 is in interest-bearing securities. We typically meet with our adviser, Katrina Tull at Evans and Partners, twice a year, but email allows us constant contact between meetings. Her advice has been a material factor in the portfolio increasing in value by 45% over the last two years.

David Moore

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**BICENTENNIAL GOLD 88 ENDOWMENT****Report for the Year 2013**

Guided by this Endowment's mission to provide funds for the advancement of education and research in Earth Sciences for the benefit of economic geology in Australia, grants have been awarded to assist geoscience students with costs of research in topics of economic geology during 2014.

Compared to last year, there was a significant increase in the number of applications for support in 2014, ranging across the fields of economic geology, mining, environmental geology and technical education via courses and field trips. Most of these submissions were of a high standard, which made the selection of the finalists a difficult and challenging task for the Working Group assessing them. Also pleasing was the broader spread of tertiary institutions supporting the applications. All submissions were assessed in the final quarter of 2013, with recommendations submitted to the Director and Trustees early in 2014 for approval.

The sum of \$10,000 was again made available for distribution for the year 2014.

The successful recipients of support for 2014 projects are:

**The University of New South Wales:** To assist a 3rd year Ph.D. student with costs associated with fluid inclusion studies related to the epithermal Kulumandau gold deposit of the emerging Woodlark Island mining district.

**The University of Melbourne:** To support an honours student working with a research group focused on improving the early Cretaceous spore-pollen biostratigraphy for Victoria so as to better define hydrocarbon source strata in the Otway and Gippsland Basins.

**University of Tasmania – CODES :** Support for U-Pb geochronology by a 1st year Ph.D. student allied to the emerging science of geometallurgy.

The contribution of Prof. Chris Wilson and Ms. Ingrid Campbell GSA (Vic Div), long term members of this Working Group, to the assessment process is gratefully acknowledged.

Ms Xan Weber and Ms Andrea Parker of the AusIMM are thanked for their efficient administrative and secretarial support. They and their team are to be commended for their successful efforts to promote the Endowment. The ongoing commitment of The Director and Trustees to this Endowment is also appreciated.

GERHARD K. KRUMMEI  
Chairman – Working Group  
BG88 Endowment

20.02.2014

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## HERITAGE ANNUAL REPORT 2013-14

The Geological Heritage subcommittee has continued to work towards better understanding of geological heritage in the state, although only limited work was able to be undertaken this past year.

The data-base of sites has been maintained. New sites continued to be added from previously published geological significance site reports and some recent consultancy reports. This data-base has had a few requests for information.

The committee has given advice to consultants and people wishing to object to particular development projects. We are always very careful regarding objections as the GSA is not opposed to development per se. However some advice on the significance of particular sites continues to be useful. A very limited number of enquiries from municipal heritage planners.

The committee submitted material to consultants for the Victorian Environmental Assessment Committee (VEAC) report on the state's marine parks and reserves. The Committee also reviewed the significance ratings for all new sites in this report and received material for the data base in return.

The committee continues to be heavily involved with the Bacchus Marsh Council Trench management committee.

We submitted to the Melbourne City Council and other objectors to the East-West Tunnel proposal, our concerns relating to the proposed destruction of the Royal Park South site if the proposed East-West tunnel proceeds. The CIS provided by the Linking Melbourne Authority had no mention of the site at all and this information which indicates the problems we have with conserving sites in Victoria.

I wish to thank the members of the subcommittee for their work throughout the year.

Susan White  
Geo-Heritage Convenor

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## NOMINATIONS FOR THE GOVERNING COUNCIL

GSAV members are requested to assist in the nomination of a representative from your Division to serve on the inaugural nine-member Governing Council, as from July 2014. The new GSA Rules provide for four Divisional and five General Councillors. The Rules define a Divisional Councillor as a Member who is a member of a Division and who has been nominated by that Division as a Councillor to represent that Division on the Governing Council. Nominations will be called for at the AGM. Please ensure that you are prepared for this.

## AWARDS COMMITTEE ANNUAL REPORT 2013-14

*The Awards committee is pleased to present the following report on the 2013 Awards:*

### **2013 Selwyn Medal:            Ross Cayley.**

Ross Cayley graduated from the Melbourne University in 1988. He joined the Geological Survey of Victoria (GSV) in 1990 to begin work as a structural geologist, producing regional-scale geological maps, reports and wild-ideas. Ross has helped GSV teams develop geological maps and datasets and interpretations of geophysical dataset across Victoria.

Ross' first few projects were in western Victoria, most notably in partnership with David Taylor. Western Victoria turned out to be a structural geologist's paradise, and GSV work culture the perfect environment to get results.

Key results were recognition of the Moyston Fault as a major craton-directed thrust and the terrane-scale boundary between the Delamerian and Lachlan Orogens. Tectonic melange was recognised within the high-grade Moornambool Metamorphic Complex, and a structural model developed that linked movement on the fault to the formation and exhumation of this broad, complex hangingwall region. Another highlight was remapping of the Grampians Ranges, revealing them as an extensionally-segmented thrust-and-fold belt.

Since the 1990s, Ross has worked in larger GSV project teams on out-of-sequence thrusts along the eastern margin of the Melbourne Zone (the Mount Useful Fault Zone), in the Glenelg River Metamorphic Complex, the Omeo Metamorphic Complex, the rugged terrain of the Tabbeabbera Zone, and the goldfields rocks of central Victoria, including project-managing the Walhalla-Woods Point-Tallangalook project. A career highlight was the landmark GSV publication 'The Tasman Fold Belt System in Victoria'. Ross also contributed to several chapters of the 3rd edition of the Geology of Victoria, published by the GSA (Victorian Division) in 2003.

Ross is currently a Senior Geologist for GSV, these days specialising in structural geology and regional-scale tectonics, and implications for prospectivity. Congratulations Ross!



*Ross Cayley receiving his 2013 Selwyn Medal from previous Selwyn Medallist Fons Vandenberg*



*Ross and fellow "Selwynites": From the left, Guy Holdgate, Mike Hall, Fons Vandenberg, Ross Cayley, Clive Willman, Bernie Joyce, Ray Cas.*

## AWARDS COMMITTEE ANNUAL REPORT 2013-14

### The GSAV 2013 student award winners:

The winner of the **Frank Canavan Award**, for most promising second year geology student in Victoria was **David Bilton** from Ballarat University.

The winner of the **D.E. Thomas Medal**, awarded for the production of the best honours year level geological map was **Emily Hordern** from University of Melbourne. Emily's honours project involved the mapping of previously undescribed Neoproterozoic reef complexes in the Mount Lyndhurst area in the Northern Flinders Ranges, South Australia. Her thesis provides new insights into depositional environments associated with climatic extremes within an ancient deep rift basin. Field work included multiple traverses of the Mount Lyndhurst reef complex, which is one of several reef complexes in the Northern Flinders Ranges. A detailed geological map and stratigraphic section of the field area was developed incorporating comprehensive field data.



*David Bilton (Canavan Award) and Emily Hordern (Thomas Medal) with Ingrid Campbell, Chair, Awards Committee*

The GSAV awards committee congratulates these young scientists on their accomplishments and looks forward to watching their progress as the years pass. I would like to thank the members of the Awards committee again for their continued support during the year.

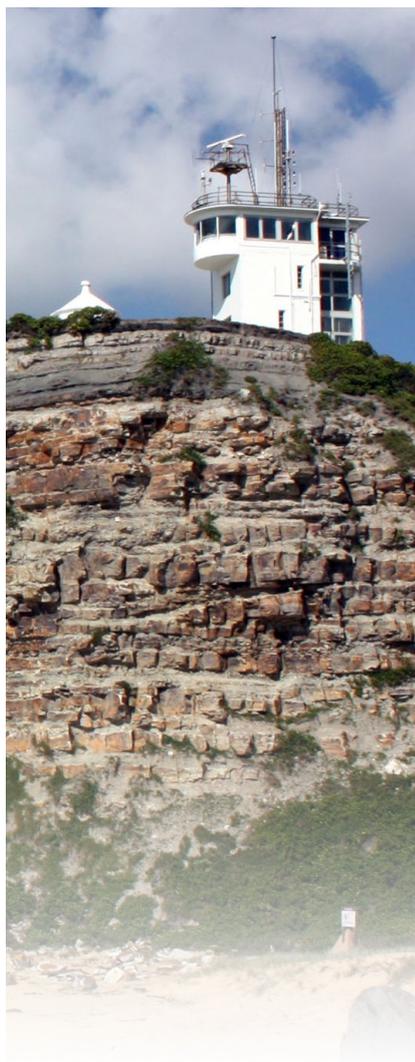
Ingrid Campbell,  
Chair, GSAV Awards Committee



**Sustainable  
Australia:**  
7-10 July 2014



NEWCASTLE, NSW, AUSTRALIA



AESC 2014 will be held in Newcastle, a vibrant port city that is characterised by its working harbour, beautiful surf beaches and proximity to many of Australia’s most prestigious wineries.

It is the gateway to the Hunter Valley – heart of the Sydney Basin coalfields, centre of power generation for New South Wales, and home of the NSW Institute for Frontier Geoscience, a joint initiative of the University of Newcastle and the NSW Department of Trade and Investment. Combined with the city’s focus on energy efficiency via the Federal Government’s Smart Grid, Smart City initiative and the CSIRO Energy Centre, Newcastle is an ideal site for our convention – **Sustainable Australia.**

The convention will be based around the themes of energy, basin geology, geodynamics, resources and the environment. Dedicated symposia include the 39th Symposium on the Advances in the Study of the Sydney Basin and Comparisons & Contrasts in Circum-Pacific Orogens.

AESC 2014 offers all geoscientists a unique opportunity for professional development and a chance to hear firsthand the latest developments in geosciences.

**Plan your trip to Newcastle**

Call for Abstracts:  
**October 2013**

Abstracts Deadline:  
**March 2014**

The website is coming soon, in the interim please contact:  
**info@gsa.org.au**

**Presentation:** Oral and poster

**Registration:** early 2014

**Workshops and field trips:**  
The convention invites proposals for short courses, workshops and field trips.

**Exhibition:**  
The convention will host an exhibition. We welcome companies and businesses to participate so they can promote the emerging opportunities in their organisation, state or territory.

**Supporters:**  
The organising committee invites companies, institutions and technology providers to support this meeting.

**Expressions of interest:**  
info@gsa.org.au

**Convention location:**  
Newcastle City Hall



*Coalfield Geology Council  
of New South Wales*

T + 61 2 9290 2194  
F + 61 2 9290 2198

Email: info@gsa.org.au  
Convention Website: coming soon



# AESC

australian earth sciences  
convention

**Sustainable  
Australia:**  
7-10 July 2014

NEWCASTLE, NSW, AUSTRALIA



Earth scientists recognise that the key to sustaining the Australian society, economy and environment into the future lies in an understanding of the make-up, structure and deep-time history of the continent, and its setting in an evolving planet.

## THEMES

### Energy

Increases in the global demand for energy has been driving advances in the efficiency of coal and conventional hydrocarbon extraction, while also urging the rapid growth of interest in unconventional hydrocarbons. Future energy supplies are likely to include all fossil fuels, nuclear sources, and significant increases in the use of renewable energy and cleaner alternatives. Building on the public debate to be stimulated by the 'Energy 2050' public forum, the Energy theme will encompass Earth Science perspectives on energy sources, exploration and extraction methods, and environmental consequences and solutions.



Coalfield Geology Council  
of New South Wales

### Resources

In an era of increasing demand for mineral resources from the developing Asian economies, and declining rates of discovery of new deposits, new mineral exploration strategies are vital. Discovery will be stimulated by new technologies, new methods of data interpretation and dissemination, refined and novel understandings of mineral systems and ore environments, and the strength of the pre-competitive geological and geophysical data sector, all addressed under the Resources theme.

### Environment

Earth's environment is a dynamic and responsive system with a long geological record of change and an immediate and future impact on society, particularly in an Australian context. High-resolution records of past climates (including outcome of the International Ocean Drilling Program), assessments of the state and future of our ground- and surface-water resources, predictions of the response of the Australian environment to climate change, and studies specific to the Australian arid and semi-arid zones, will be major elements of the Environment theme.

### Service and Community

The Earth Sciences have an ongoing role of service by informing, influencing, and supporting Australian society, and a proud history of education and research. The Service and Community theme will address the geoscience response to distributed grid computing and cloud storage, the dissemination of geoscience information in a high-bandwidth environment, the continuing and evolving role of geoscience outreach and education, geohazard studies and their role in protecting the community, the contributions of geotourism and geoheritage, and the historical record and influence of Earth scientists.

### Dynamic Planet

Today's Earth is the sum of 4.5 billion years of geological processes. The Dynamic planet theme will address: the geodynamic evolution of Australia and other continents from the Hadean to the present; the evolution of the Earth-Moon system and the meteoritic impact record; the expression of the circulation driven by the Earth's heat engine in lithospheric plate tectonics, mantle dynamics and differentiation, and core evolution; the processes that govern deposition and deformation in intracratonic settings; processes of crustal growth and recycling, at convergent margins and in other settings; geophysical and geochemical evidence of the structure and composition of the deep subsurface; and the influence of all of these elements on the formation and distribution of mineral and energy resources.

### Living Earth

Life has fundamentally influenced the development of the Earth, making it unique with respect to its planetary neighbours. The Living Earth theme will investigate: the evolution of life as witnessed in the fossil record; consider novel methods to supplement traditional palaeontological approaches; investigate the major events in the evolution of life, the hydrosphere and atmosphere; and draw contrasts and comparisons with other planets.

## SYMPOSIA

39<sup>th</sup> Symposium on the Advances  
in the Study of the Sydney Basin

Comparisons & Contrasts  
in Circum-Pacific Orogens

T + 61 2 9290 2194  
F + 61 2 9290 2198

Email: [info@gsa.org.au](mailto:info@gsa.org.au)  
Convention Website: coming soon

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**STUDENT FUNDING OPPORTUNITIES**

## **Geological Society of Australia (Victoria Division) Student Research Scholarships**

The GSAV are pleased to offer up to \$10,000 per year in scholarships available to honours and postgraduate students for assistance with travel costs associated with conferences and field work.



The scholarship is valued at up to \$500 for travel within Australia and \$700 for travel outside of Australia. The number of and value of the scholarships awarded each year is made at the discretion of the GSA(Vic) committee.

Funding will not be granted retrospectively and applicants are asked to submit forms no later than 6 weeks prior to their trip to give the committee time to consider the application.

Students that receive this scholarship are required to submit a report for publication in the newsletter, "The Victorian Geologist", following their trip. A presentation may also be requested by the committee, which will consist of a short, 10-15 minute presentation prior to the monthly seminar.

Applications forms can be scanned and emailed to: [secretary@vic.gsa.org.au](mailto:secretary@vic.gsa.org.au)

or mailed to:

Geology Research Scholarships Victoria  
Geological Society of Australia (Victoria Division)  
GPO Box 2355  
Melbourne VIC 3001

More information including eligibility criteria can be found on the form and by contacting Barbara Wagstaff ([wagstaff@unimelb.edu.au](mailto:wagstaff@unimelb.edu.au))

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### **Something interesting to share? Want to see your name in print?**

Don't be bashful, contribute to the GSA(V) monthly newsletter!

If there are any events, happenings, news, or views that would be of interest to the membership, please send your details and information to Kieran Iles at [kiles@student.unimelb.edu.au](mailto:kiles@student.unimelb.edu.au)

**We'd be glad to hear from you**

## FORTHCOMING SEMINARS AND EVENTS

to be presented at  
GSA (Victoria Division) meetings

Note: unless otherwise indicated, all 2014 talks will be held in the Fritz Loewe Theatre, Earth Sciences Building, University of Melbourne.

May 29th:

### **Monthly Meeting**

Mueller Hall at the Royal Botanic Gardens

### **Dr Twycross (7-8pm)**

The pioneering work in seismography of John Milne

### **Night Sky Tour (8-9pm)**

The Observatory celebrated its 150 anniversary last year and was the site of the Greater Melbourne Telescope the largest telescope in the southern hemisphere at the time. The site was also used for geophysical observation and includes the magnetic house a dedicated building used for observations of the earth's magnetic field.

Please note that whilst the talk is open to all, tour numbers following the talk are limited to 30 people. Please register by paying Adele Seymon (GSAV Secretary) \$10 in person at the AGM on the 24 April 2014. It is expected that the tour will be sold out so get in early.

Please welcome our newest members

Kieran Iles



Visit the GSAV on [www.vic.gsa.org.au](http://www.vic.gsa.org.au) or the GSA on [www.gsa.org.au](http://www.gsa.org.au)  
• Renewing your GSA membership is easy - it can now be done online. •

### **CONSIDER CONTRIBUTING TO TAG!**

It is member contributions which make TAG a member magazine – please keep the contributions coming and assist with informing all of the membership (not just your Division) about your activities.

Please send your news to: [tag@gsa.org.au](mailto:tag@gsa.org.au)



### GSA (VICTORIA DIVISION) COMMITTEE

Please address all correspondence to the GSA Victoria Division  
GPO Box 2355, Melbourne, VIC, 3001  
Internet address: [www.vic.gsa.org.au](http://www.vic.gsa.org.au)

#### OFFICE BEARERS

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Secretary:	Adele Seymon	0403 269 462	Susan White	9328 4154
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			Syed Amir Mahmud	9902 4206 (BH)
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#### Newsletter deadline:

First Friday of the month except Dec & Jan  
[kiles@student.unimelb.edu.au](mailto:kiles@student.unimelb.edu.au)

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