



November 2012

THE GEOLOGICAL SOCIETY OF AUSTRALIA  
Victoria Division

## Final General Meeting of 2012

Thursday 29th November at 5:50 p.m.

Venue: 55 Collins St, Melbourne

### **Development of the 3D model for the state of Victoria**

**Dr. Mark McLean and Dr. Peter Tingate**

IMPORTANT: Registration is VITAL as the 3d room has limited capacity. Please contact Adele Seymon (aseymon@gmail.com OR 0403 269 462)

The GSA Victoria Division has been fortunate to gain access to GeoScience Victoria's 3D room for the November meeting, where the GSV will showcase their 3D model of the state. You will be able to visualise the stratigraphy, fault patterns and intrusions that have been constructed after 160 years of mapping integrated with the results from the 2006 deep seismic survey. A rare chance to see this at its best, presented by Dr Mark McLean and Dr Peter Tingate.

Detailed abstract within newsletter.

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**ABSTRACT**

Growth in the resources industry sector is predicated on the availability of high quality pre-competitive geoscience data in order to attract new mineral and hydrocarbon exploration to the State. During the last two decades GeoScience Victoria (GSV) has completed world class 2D surface geological mapping throughout Victoria. In addition, the State has been comprehensively covered by regional scale airborne magnetic and radiometric surveys as well as ground gravity surveys. Together with two new regional seismic traverses across the Palaeozoic in central and Western Victoria and seismic survey coverage in the younger basins, these datasets collectively allow for interpretation at depth of the rock types which are seen at the surface.

The Rediscover Victoria Initiative, and the 3D Victoria 3D Geological Modelling Project within it, were designed to build upon this incredibly valuable dataset and to provide explorers and resource managers alike with a world-class 3D geological dataset. This model can be used to analyse resource potential, predict the location of undiscovered accumulations and allow the development of a 4 dimensional resource management framework for the State's basin contained energy and water resources.

Scientifically the aim of the 3D Victoria Project was to accelerate the development of a suite of 3D models and 3D model objects which would provide a complete and integrated 3D representation of the geology of onshore and offshore Victoria. This will provide a geologically robust framework on which future value-adding projects can be based, for example (but not limited to) numerical simulation of hydrocarbon generation and geo-sequestered carbon dioxide migration, mass transport modelling in and around ore systems, groundwater aquifer recharge rate and volume estimation and heat flow modelling for geothermal energy exploration targets.

Specifically, the 3D Victoria Project was designed to provide a comprehensive 3D model of Victoria, at 1:250,000 scale, which includes all faults, lithostratigraphic and chronostratigraphic surfaces and known mineral occurrences relevant at this scale. The model is integrated with the 2D Seamless Geology GIS dataset and as such these will be consistent in terms of attributes and geometry. This presentation summarises the philosophy, input data and methodologies used to create the 3D model of Victoria. It also provides interactive examples of 3D applications for the mineral and petroleum sectors using GeoScience Victoria's state-of-the-art stereoscopic visualisation facility.

**AWARD NEWS**

Megan Kay from the University of Ballarat has been awarded the Canavan Prize for the best second year student in Earth Science at a Victorian university.

There were no candidates for the D. E. Thomas medal this year.

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**STUDENT CONTRIBUTIONS****Tim Robson****PhD Candidate****Environmental Geoscience, LaTrobe University**

The travel grant awarded from the Victorian Division of the Geological Society of Victoria, supported my recent trip to Canada to attend and present my work at the 2012 International Association of Hydrogeologists (IAH) Congress in Niagara Falls and also meet with researchers from Simon Fraser University and the University of British Columbia (UBC) in Vancouver.

I arrived in Niagara Falls on the 20th of September 2012, which was the day before the conference technical sessions began and allowed me to register and attend the 'ice breaker' drinks where I met up with some other Australian delegates. The conference began on Monday the 21st of September and was attended by over 900 hydrogeologists from around the world; Australia was the third highest country in attendance.

My presentation was the first of the groundwater-surface water interactions session on Tuesday, so Monday allowed me to attend most of the talks in this session to scope out the room I was presenting in, see what the others in the session were presenting and the type of questions asked. There was also an 'early career hydrogeologists' meeting and get together on the Monday afternoon which was a great way to connect with other hydrogeologists at a similar career stage to myself from around the world.

My presentation on Tuesday 21st of September was titled 'The effect of lake loading on groundwater levels around Lake Tutchewop in the Murray-Darling Basin, southeastern Australia.' It was well attended even though at this 10 am timeslot I was competing with hydrogeological pioneer Jozsef Toth. I was asked some good questions and met some people who were interested in my research. It fitted in well amongst the other presentations given in the groundwater/surface water theme.

On Wednesday, I attended the groundwater/surface water glacial geology mid conference field trip which allowed me to gain insights into the geology and hydrogeology of the area around Niagara Falls and learn about some different systems and processes which occur here that are not very common in Australia (photos below). Another highlight of the conference was the dinner on Thursday night which was at Table Rock which is situated atop a cliff that overlooks the Niagara Falls.

The week after the conference, I visited some researchers in Vancouver. On Tuesday the 25th of September I visited the Dr Diana Allen and her hydrogeology research group at Simon Fraser University.

She had invited me to attend a practice run of one of her PhD students' defense presentation which was titled 'Modeling deep groundwater flow through fractured bedrock in a mountainous headwater catchment using a coupled surface water – groundwater model, Okanagan Basin, British Columbia'. After this presentation, Diana spent time looking at my project and suggesting some useful techniques that may be useful as independent verification of the hydrogeochemistry. It was also good to meet some of her students to discuss their research projects.

Roger Beckie and his hydrogeology research group at UBC were visited on Wednesday the 26th of September. He invited me to attend two presentations given by his students. One was a Masters' student's findings from his research titled 'Assessment of cover systems for waste rock in the Antamina Mine' and the other one was a student investigating the potential use of Raman Spectroscopy in characterizing crystalline and non-crystalline secondary minerals. Before and after the presentations it was also good to hear about Roger's students' research and to walk around the UBC campus.

I would like to thank the Victorian Division of the Geological Society of Australia for providing me with a travel grant to support this trip. It was a great experience to present my research to my peers and meet with hydrogeologists from around the world and expand my connections.



Photos left to right, top to bottom: Sedimentary layers at Balls Falls, glacial cross bedding at Lafarge Fonhill Pit, fossils at Wainfleet Wetlands and Horseshoe Falls at Niagara Falls.

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## **GSA REVISED RULES AND GOVERNANCE NEWS**

### **GSA Revised Rules and Governance News**

The Revised Rules of the GSA are now online and available for your feedback, via your affiliated Division, Branch or Specialist Group, by 14 December. However, it is important that you first read the following article, which will also be published in the December TAG. Therefore we urge you to:

- 1) Read the following article;
- 2) Read the Revised Rules. The Revised Rules are what members will be asked to vote on in 2013;
- 3) If you require clarification on the changes, review the Existing Rules, or the document that is an annotated copy of the Existing Rules.
- 4) Contact a member of the Governance Committee if you would like further clarification (contact details can be found on the Revised Rules page at: <http://gsa.org.au/management/rules.html> or at the end of this email).
- 5) Provide feedback by 14 December, 2012.

The website link at the end of the article below provides you with the links to the Revised and Existing Rules and the cover notes include all contact details to register your feedback.

To register your feedback, please direct it to a Division, Branch or Specialist Group with which you are affiliated, at the contacts provided on the website. Please note that these groups have each been requested to provide collated feedback by 21 December 2012, therefore they will need your contribution at least a week beforehand (14 December 2012). As explained below, the timetable to enable Members to vote on the Revised Rules before the 2013 AGM requires that 21 December is a firm deadline for final feedback via the Divisions, Branches and Specialist Groups.

Thank you.

Sue Fletcher, GSA Executive Director

### **Governance Changes Update (TAG, #165)**

#### Recent Developments

In late October 2012, the GSA Governance Committee sent a memorandum to the Division, Specialist Group and Branch Committees, accompanied by an advanced version of the Revised Rules. That memo outlined the background, progress, and time lines for the proposed changes to the Society's governance and, most importantly, provided a final opportunity for feedback on the Revised Rules by 21 December 2012.

On 14 November, 2012 individual GSA Members were advised by email that the Revised Rules had been loaded on to the Society's website and their feedback was also requested, via an

affiliated Divisions, Branch or Specialist Group. To be effective, this individual Member feedback will need to be with one of those affiliated groups by 14 December, to allow time for collation ahead of the deadline.

## Background

As you are aware, the National Executive Committee, through the agency of its Governance Committee, has been working to modernise the governance of the Society as directed by Council in 2010. The progress report in the June 2012 edition of TAG outlined the Executive's plans for implementing the changes required to ensure that the Society will be fully compliant with the legal Act that enables its all-important not-for-profit status. This report followed earlier consultation with Divisions, Branches and Specialist Groups and subsequent adjustments to the Rules, following their generally positive feedback.

A second progress report in the September 2012 edition of TAG advised that the Revised Rules were endorsed at the Council meeting on 5 August and at the Annual General Meeting (AGM) on 6 August, subject to relatively minor amendments. Following these amendments, and further consideration by the Executive, they were submitted to Divisions, Branches and Specialist Groups for final consultation and feedback, in late October, and to individual Members in mid-November.

The key objective of the changes is to provide for an elected National Governing Council to replace the current National Executive Committee appointment system. This Governing Council is proposed to be the peak decision-making authority of the Society. In recognition of the value of the broad discussion that involves all Divisions, Branches and Specialist Groups directly, the current biennial Council meeting would be replaced by a forum at the biennial Convention, attended by representatives of Divisions, Branches and Specialist Groups, and members of the Governing Council.

## Remaining Work in 2012

Our timetable is aimed towards achieving a ballot of Members on the Revised Rules by the next AGM in May 2013. If this ballot results in the approval of 75% of voting Members, the Executive would then complete the remaining steps required for the Governing Council to operate immediately following the AGM in 2014. To achieve this we seek feedback from Members through their Divisions, Branches or Specialist Groups by 21 December 2012. For us to properly consider and accommodate your feedback and also to ensure that we provide individual Members with adequate access to the final version of the Revised Rules well in advance of the 2013 ballot, we must be firm about the 21 December deadline.

To succeed, the vote will require 75% approval of those Members that vote in 2013 and therefore the completeness of the consolidated responses we receive from the Divisions, Specialist Groups and Branches will guide the completeness of the final amendments to the Revised Rules. In other words, we urge that your first reading of the Revised Rules is in 2012, before you vote in 2013.

While we recognise that the proposed changes will not please all Members, we have experienced widespread support for the concept of modernising the Society and increasing its effectiveness and value to Members, irrespective of the changes required under the Act. There

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has also been a strong commitment to change within the Executive over the last 3-4 years, motivated by the best long-term interests of the Society.

#### Timetable for 2013-2014

The new Rules must be accompanied by a revised set of Procedures that will guide some of the detailed operational processes for a Governing Council and its associated Executive. These are now being prepared and will be made available for review in early 2013. The Procedures do not require formal approval by Members; however there will be adequate opportunity for Divisions, Branches, Specialist Groups and individual Members to comment before being finalised prior to the AGM in 2013. Actions scheduled for 2013 include:

- January-February - incorporate feedback received by 21 December 2012 and finalise Rules.
- March-April - final Rules and ballot papers forwarded to financial Members.
- All postal ballots counted before Annual General Meeting.
- The final postal votes will be announced at the AGM (only postal votes will be counted).

If the Revised Rules are approved, the Executive will then initiate arrangements to enable a call for nominations for election to the Governing Council in 2014, and to undertake the associated election process. It will also initiate discussions with the first four Divisions to be represented on Council to ensure that these appointments are known prior to the ballot for the first five General Councillors. The timetable for Divisional representation will be finalised in the coming months. Election of the General Councillors and appointment of the Divisional Councillors will be completed in time for ratification at the 2014 AGM and for the Governing Council to commence operation immediately following the AGM.

Thanks and regards

Jim Ross - on behalf of the Governance Committee

Governance Committee

Ian Graham: [i.graham@unsw.edu.au](mailto:i.graham@unsw.edu.au)

Laurie Hutton: [laurie.hutton@deedi.qld.gov.au](mailto:laurie.hutton@deedi.qld.gov.au)

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Chris Yeats: [chris.yeats@csiro.au](mailto:chris.yeats@csiro.au)

Sue Fletcher: [sue@gsa.org.au](mailto:sue@gsa.org.au)

The Draft Rules are accessible from the GSA website at <http://gsa.org.au/management/rules.html>, or by contacting your Division, Specialist Group or Branch Committee. Member feedback should be sent to the contact for your Division, Branch or Specialist Group, as listed on the website. Sending your feedback to them provides them with an opportunity to hear your opinions; they can then send that to the GSA Executive Committee as consolidated feedback representative of their Division, Branch or Specialist Group.

<http://gsa.org.au/management/rules.html>

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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 Matt Bliss at [mbliss@student.unimelb.edu.au](mailto:mbliss@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 2011 talks will be held in the Fritz Loewe Theatre, Earth Sciences Building, University of Melbourne.

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NO MEETINGS UNTIL FEBRUARY 2013

Please join the GSAV in welcoming our new members



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)



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### 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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Treasurer: Barbara Wagstaff 8344 6537 (BH)

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#### OTHER CONTACTS

Geology of Victoria: Bill Birch 9270 5049 (BH)

#### Newsletter deadline:

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

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