



Volcanic and Magmatic Studies Group

December 2017 Newsletter (No. 37)

Welcome to the December VMSG newsletter!

Welcome to the last quarterly VMSG newsletter of 2017. After a busy year, the VMSG annual conference is only a few mince pies away and will welcome the community to Leeds in early January. In this issue we have more student bursary awards, details of a new open access geoscience research platform, outreach initiatives and the announcement of changes to the VMSG committee.

2018 VMSG Annual Conference in Leeds

Leeds Event Website

Dates: 3-5th January

Location: Leeds City Museum

Website: <https://vmsg2018.leeds.ac.uk/>

Program: Four broad multi-disciplinary themes include **1.** Volcanic Arcs (Keynote: Dr Hugh Tuffen); **2.** Rifts, Islands and Intraplate Volcanism (Keynote: Dr William Hutchison); **3.** Beyond the Vent; **4.** Explosive ideas.



I have kept the details here brief as the event website (see above link) is very well presented and comprehensive, so please follow the link to find out more details on additional features such as workshops, accommodation and travel etc. The event looks set to be a great meeting as always, see you all in Leeds!

Voices in Volcanology

By Janine Krippner

Utilizing Facebook for outreach Social media has become a powerful means of getting information, quickly. When the right information is not there, it is simply made up and it spreads like wildfire. This is made worse by scaremongering media, as I have seen throughout the Agung crisis in Bali. A growing number of scientists are on Twitter, but most of us only use Facebook for personal use. We have a communication gap in this international online community, which is a place where people go to discuss and share information. Through the Agung crisis, Facebook groups have formed where people make their own interpretations using the data and predictions are made. These have become toxic environments. The public page 'Voices of Volcanology' will be a reliable source of information from the volcanology community. A space for us to share correct and factual information, promote official information sources (and other official social media groups), address misinformation, assist observatories by sharing their reports, share our research, and interact with the public Facebook community to help build trust in our field. This is also a place for all of us to interact and network. This is not a place for people to make their own volcano forecasts or undermine anyone in any way. It is a place where all of us in the broader volcanology community can show a united front and work together. All volcano professionals are welcome, including petrology, geology, geochemistry, geophysics, social science, archaeology, emergency management, hazards, energy & mineral resources, etc. I invite you to join the community even if you don't want to post publicly. I am also open to comments and suggestions, and I am happy to share information for you if you are not comfortable (Dr Janine Krippner: jbk29@pitt.edu).



A 'preprint' is a version of a scholarly paper that precedes publication in a peer-reviewed journal; a 'preprint server', such as the community-led, volunteer-ran 'EarthArXiv' (www.eartharxiv.org), is an online platform purpose-built to host preprints. A preprint may represent the same manuscript eventually submitted to a peer-reviewed journal, although other content, which may currently be difficult to publish (e.g. datasets, method papers), can also be uploaded and, if appropriate, explicitly linked to the associated manuscript. In this way, preprints provide access to important scholarly content that would otherwise be lost.

Preprints are an effort to address several aspects of the traditional publication system that may be considered, given the technological benefits of the internet, somewhat antiquated. For example, they can speed up dissemination, utilisation, and citation of scholarly outputs, and can also help build your network and may facilitate establishment of new collaborations; this may be particularly beneficial for ECRs and/or researchers moving into new areas. Furthermore, because they are timestamped and receive a DataCite-minted DOI, preprints provide an undeniable record of priority and 'ownership', which all but eliminates the chance of being "scooped". Preprints also allow for no-cost publishing, are Open Access (OA) on submission, and are indexed by Google Scholar and discoverable by web-tools such as Unpaywall.

Despite being new to many if not most Earth Scientists, preprints have been in use for >20 years. For example, the original, Cornell-ran preprint server, ArXiv, which covers, amongst other things, Physics, Mathematics, and Computer Science, hosts >1.3 million preprints. Furthermore, several new preprint servers (e.g. BioRxiv, PsyArXiv, Paleorxiv) have recently been launched in many branches of the physical and social sciences, with many

more in the pipeline. Major funders (e.g. German Science Foundation (DFG), Wellcome Trust, Medical Research Council, Cancer Research) now encourage preprint submission in support of grant applications; preprints may thus inform grant review process and academic advancement at all levels of experience. In fact, some major US-based academic institutions actively encourage job applicants to include preprints in support of their applications. Major publishers, such as Nature, also actively encourage the use of preprints to help enhance the quality of research they receive and may ultimately publish, and AGU have recently announced their intention to launch their own Wiley-supported preprint server, ESSOAr. We should also add that EarthArXiv, like several other preprint servers, also hosts and can thus act as a repository for 'postprints' (i.e. published articles), helping facilitate (Green) OA and meeting the needs of the many researchers who lack an institutional and/or national scholarly publications repository.

A group of international volunteers, organised by the Earth Science Information Partners (<http://www.esipfed.org/>), recently built EarthArXiv a community-led preprint service for the Earth Sciences, which is built on infrastructure provided by the non-profit Center for Open Science's (<https://cos.io/>) 'Open Science Framework'. Since launching in October, EarthArXiv has received >150 submissions in just 6 weeks, with material spanning a range of Earth Science disciplines, some of which is relevant to the VMSG community (e.g. igneous geology, thermochronology, etc). There have been almost 3000 visitors to the site, so we strongly encourage you to visit and personally assess the quality of material available for consumption. We have been featured in Nature (<http://www.nature.com/news/giant-pandas-gender-lawsuit-and-more-disaster-havoc-1.22664>) and Science (<http://www.sciencemag.org/news/2017/09/dueling-preprint-servers-coming-geosciences>), and on several science podcasts (<https://www.youtube.com/watch?v=vqYccGyVh4g>). In the new year we will visit SpringerNature and PLOSone to discuss future developments in the area of preprints, and we will host a 'Townhall' meeting, alongside AGU, at the EGU General Assembly in Vienna. If you have any questions, please do not hesitate to contact either Chris Jackson (c.jackson@imperial.ac.uk) or Tom Narock (tnarock@ndm.edu), two of the co-founders of EarthArXiv. Some additional information and 'FAQs' are available here: <http://bit.ly/2BqagsH>. We welcome

feedback and look forward to discussions on how we can improve this service!

Craig will also be at VMSG in Leeds, so you can also catch him there to discuss.

VMSG Committee changes

At the upcoming January meeting there will be a number of changes to the VMSG committee. Mike Widdowson who has chaired the committee for the last three years, following many years of invaluable contributions to the committee as both ordinary member and secretary, will step down and pass the baton on to Sally Gibson. Congratulations Mike on exemplary steering of the VMSG and a thank you on behalf of all of us for the selfless time and efforts you have devoted to VMSG and a big welcome to Sally!

Kate Dobson, Sebastian Watt and Janine Kavanagh will also rotate off the VMSG committee and so a huge thank you on behalf of the committee and the community for all your hard work and invaluable input over the past years! Bob Gooday who has done a fantastic job as the student rep will also step down. Sam Engwell (BGS), Mike Cassidy (Oxford) and George Cooper (Durham) have been elected as new Ordinary Members, and Rebecca Astbury (Perugia) was elected as Student Rep. Welcome all!!! Summaries from the new members are listed below and we will have more details relating to the change of chair in the February newsletter.

Samantha Engwell (British Geological Survey)



The annual VMSG meeting in Glasgow in 2010 was the first conference I attended, and I feel that the meetings and group provide a great way for those in the early stages of their career to gain confidence in the research environment, share ideas and learn from more established

researchers. I am keen to work with the committee to ensure that the commission is accessible to both students and established researchers, providing a forum for communication of research ideas and collaborations, while providing governmental context.

I began my career in research studying lahar emplacement on Galeras volcano in Colombia as part of a master's degree at the University of Bristol. I went on to

complete a PhD at Bristol, looking at distal deposits from large explosive eruptions, uncertainties in their analysis, and the volcanic record. During my PhD, I became interested in the development, application and uncertainties associated with of numerical modelling techniques, particularly applied to explosive eruptions. On completion of my PhD, I moved to INGV, Pisa as part of the Marie Curie ITN NEMOH, where I focused on these issues in relation to coignimbrite plume formation and ash dispersion. I currently work at the British Geological Survey, where my research uses a combination of fieldwork and deposit analysis with numerical techniques to understand eruption dynamics and hazard assessments, combining information from the geological record with numerical techniques across a range of volcanic environments.

Working at both universities and governmental institutions has given me a unique perspective into wide range of scientific techniques, and the expectations from different institutions. It is upon these experiences that I base my collaborations, work and outreach today, for example through mentoring underprivileged high school students with the aim of making higher education more accessible through the social mobility program, and through supervising my own PhD students. My role at the BGS involves communication with a number of stakeholders, from the UK government and ERCC (Emergency Response Coordination Centres), to the aviation industry and I feel that this experience and these contacts will enable me to help direct policies that have far reaching impacts out width of academia.

I am keen to work with the committee to define strategies that provide support for the members and interested stakeholders, enabling integration of information gained from the different areas across volcanic and magmatic systems. As such I am proud to be part of the organising committee for the 2019 VMSG meeting in St. Andrews.

Mike Cassidy (University of Oxford)



I have been a VMSG member and meeting attendee since 2008. I think it's a great community and one that is growing in recognition and size each year. I am applying to serve as an ordinary member,

so that I may continue to develop the VMSG's friendly, inviting, and unthreatening atmosphere at meetings - especially for new students and early career scientists. There are several ways I believe the VMSG could develop in the future, in particular I think we could a) use our community to better advise and support early-career scientists both in and outside academia, b) help engage the public and the next generation of volcanologists through different means, and c) drive more cross-disciplinary research collaboration so that we can continue to apply our research to helping the communities directly affected by volcanic eruptions. These are the ways I would like to help the VMSG community to develop in the future.

I am a new NERC research fellow at Oxford, but I have previously worked at Bristol (BSc), Lancaster (MSc), Southampton (PhD), and had stints in Cambridge, Plymouth, and Mainz (Germany). My research focusses on understanding why volcanoes erupt either effusively or explosively, using a range of approaches in analytical and experimental petrology, with an aim to combine these with volcano monitoring to improve eruption forecasting.

George Cooper (Durham University)



My research interests focus on crystal specific studies (in particular, in-situ microanalytical approaches) in order to determine the pre-eruptive state of volcanic plumbing systems and the timing of magmatic processes. This includes the use of in-situ major and trace elements to determine magmatic storage conditions and establishing the timescales involved through U-Pb dating of zircons and diffusion modeling.

During a PhD at Victoria University of Wellington, I worked on the products of supereruptions in the TVZ, New Zealand to determine the magmatic processes which lead to such large scale silicic eruptions. Since returning to the UK, I have investigated processes in the deeper magmatic plumbing systems beneath the islands of the Lesser Antilles Volcanic Arc through the study of erupted plutonic xenoliths/cumulates. I am currently a postdoctoral researcher based at Durham University (and University of

Bristol) and I am focused on volatile recycling at the Lesser Antilles Arc. In particular, using the geochemistry of melt inclusions to determine the sources and pathways of fluids.

Attendance at the last four VMSG conferences has repeatedly demonstrated how friendly, supportive and collaborative the research community can be. The social settings at the meetings makes VMSG accessible for all. I believe this positivity is invaluable for young researchers, to get started in their career. I would relish the opportunity to support this community by becoming a VMSG committee member. I believe that VMSG has the potential to be a strong platform for interdisciplinary collaboration for researchers at all stages of their career and my experience in research, across institutions both in the UK and abroad, gives me a good foundation from which to promote this. Preparing for and presenting at VMSG meetings have been very useful in my own academic progression and I would therefore like the opportunity to support other young researchers in this process.

Rebecca Astbury (University of Perugia)



I am currently coming to the end of my 2nd year as a PhD student at the University of Perugia, Italy. My main research focus is unravelling dynamic plumbing system processes

using trace element mapping of minerals, alongside some experimental petrology. I previously completed my undergraduate Masters degree at the University of Edinburgh in 2015.

I am interested in standing for the position of Student Representative because, as a British/Irish student currently working in Italy, I have become aware of the lack of knowledge about the VMSG community among non-UK students. As Student Representative, I would like the opportunity to spread the word to students outside of the UK about the value of attending the annual conference, as well as getting involved with the group in general. I would also like to ensure that students such as myself don't lose touch with the UK volcanology community. So far, I have attended three VMSG conferences (Norwich, Dublin and Liverpool) and the support and encouragement I received there has benefitted me hugely in my very early career as

a researcher. Being able to share that support with students further afield can only help to advance research and collaboration in volcanic and magmatic studies.

I'm always eager to learn new things and give myself new challenges, so I would really enjoy getting more involved with the VMSG committee and helping out with the organisation of future events. In the past, I have acted as Vice President of the University of Edinburgh Geological Society, with duties such as taking responsibility Academic Families (pairing students with appropriate mentors) and organising the annual GeolSoc Spring Ball. I also represented my peers at Staff-Student Liaison meetings throughout my undergraduate career at Edinburgh.

Hopefully my current experience outside of the UK and my past experience communicating with students, and voicing their concerns or questions, would make me a good addition to the VMSG Committee in 2018.

Student Bursary Reports

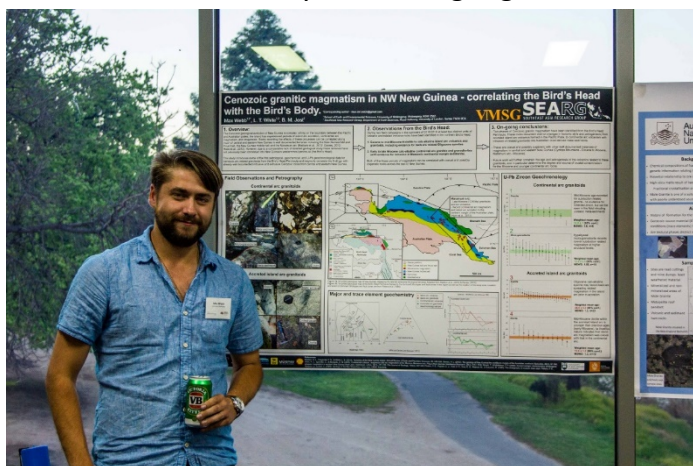
Within this section, short reports are included that have been sent in by PhD students who received VMSG bursary funding to attend conferences. Well done to all presenters!

Granites@Benalla2017 Symposium and Field Course

25/09/17 – 28/09/17

Attendee: Max Webb

Affiliation: University of Wollongong



Cenozoic granitic magmatism in NW Guinea – correlating the Bird's Head with the Bird's Body

In late September I travelled to Benalla in Victoria, Australia to attend the Granites@Benalla2017 Symposium and Field Course. Having recently transferred from Royal Holloway University of London to the University of

Wollongong in Australia, this was a fantastic opportunity to present my research to a wider audience in Australia, whilst gaining specialist knowledge on granite petrogenesis, emplacement, and associated mineralisation.

At this conference I presented part of my research entitled 'Cenozoic granitic magmatism in NW New Guinea – connecting the Bird's Head with the Bird's Body' in this study I used U–Pb zircon geochronology, whole rock major and trace element analyses, field observations, and petrography of several Oligocene to Miocene granitoid intrusions to better understand the Cenozoic tectonic evolution of NW New Guinea and how this can be related to better studied examples of Cenozoic magmatism in eastern New Guinea where it is associated with world class Cu–Au deposits.

The conference itself was well organised and attracted researchers on granite geology from around the world. Perhaps the most interesting part of the conference was studying the abundant cordierite S-type granites in the field found throughout Victoria, these cordierite granites are typical of the region and are not commonly found elsewhere, so having the opportunity to understand how these rocks formed in their type locations was fantastic. In addition, the first half of the conference was designated as a public event, allowing members of the local community to come and understand how their local granite geology formed and read the various posters, this was a great way to improve scientific outreach and was a great experience for explaining my research to people outside of the geological community.

Overall the conference and related field trips were fantastic experiences and I would like to thank the VMSG committee for awarding me the travel funds and assisting me with attending such an important conference for my PhD studies.

IAVCEI 2017 Scientific Assembly

14/08/2017 – 18/08/2017

Attendee: Simon Martin

Affiliation: University of Liverpool



How are variations in magma flow recorded across the thickness of sills: Insights from magnetic anisotropy

With support from VMSG I was able to attend the IAVCEI Scientific Assembly in Portland, Oregon. I gave an oral presentation on “How are variations in magma flow recorded across the thickness of sills: Insights in magnetic anisotropy” within the session on the Architecture of Magmatic Plumbing Systems.

The talk went well and the discussions I had about it were productive, giving me some ideas for the future. I was also able to discuss some of my ongoing analogue modelling with other modellers in the community. For these models, I am injecting plaster of Paris seeded with magnetite particles into a flour box, to investigate variations in magnetic fabrics preserved within analogue intrusions so that I can compare the recorded fabrics to those observed in my natural samples.

I was also able to attend two field trips during the conference, the first being the mid-week trip to Mount St. Helens which was interesting to see the effects of the 1980 eruption. I also went on the post-conference field trip to the Columbia River Basalt Province, where we looked at some of the many dykes, vents and lava flows outcropping across eastern Oregon and south-eastern Washington.

Both the conference and field trips were very useful as a young researcher, allowing me to discuss different aspects of volcanology with many different researchers along with catching up with friends made at previous conferences. I thank VMSG for assisting my attendance.

Attendee: Fiona Couperthwaite

Affiliation: University of Leeds



Diffusion chronometry: potential and problems as an eruption monitoring tool

I am extremely grateful to VMSG for helping to fund my travel to the IAVCEI Scientific Meeting 2017. Many geologists attend this volcanology meeting held once every 4 years and so it was a great opportunity to meet people within this scientific community that ordinarily would not have been possible. I had the opportunity to see talks and posters in specialised sessions with direct relevance to my own research as well as seeing other presentations in wider areas of interest that enabled me to learn a lot about other aspects of volcanology. I was also able to take part in a mid-conference fieldtrip to Mount St. Helens, which was a fantastic experience and there were many social events tailored specifically for early career scientists that were very engaging and valuable for me as I come to the end of my PhD.

At this meeting I gave an oral presentation to communicate the final results of my research from my PhD. This enabled me to speak to a wide variety of researchers, some with similar experience and others more diverse and to receive a lot of feedback for my research. I presented new techniques that I have developed to streamline diffusion modelling methods. These consist of rapid, easy-to-deploy methods to retrieve timescales of magmatic processes during ongoing volcanic eruptions.

During the meeting I was able to meet up with collaborators from the USA to discuss my work and the approach I will be taking in the future, as well as set up new collaborations with colleagues from the USA and Europe, which would not have been possible without VMSG's support. I was also able to set up meetings to discuss future work hopefully as a post-doctoral researcher to further develop my skills as a researcher and progress my career within academia. This would not have been possible without attendance at the conference.

Once again I would like to thank VMSG for enabling me to travel to the IAVCEI Scientific Meeting and share my work with the international volcanology community. The opportunities to meet and set up collaborations with other scientists in my field were immensely valuable. I consider this experience to have been incredibly important for future success in my academic career.

Henry Emeleus



It is with great sadness that VMSG report the recent passing (11th November) of Dr Henry Emeleus, Emeritus Professor at Department of Earth Sciences, Durham University.

Henry Emeleus was widely acknowledged as a leading expert on the formation of igneous rocks in North West Britain and Greenland. His outstanding talent and energy as a field geologist, and intuitive ability to discern relationships between and within rocks, resulted in the production of numerous geological maps for major international organisations, and an output including over 100 published papers, three BGS maps of NW Scotland, together with a further 7 published map sheets for the Geological Survey of Greenland, and later of Denmark.

His early research centred on the Western Mournes and Slieve Gullion. Later, for the Geological Survey of Greenland, he worked on Precambrian intrusions of southern Greenland and the Palaeocene lavas of East Greenland. His more recent research has concentrated on the Tertiary geology of Britain's north and west.

In 2016 The Geological Society of London honoured his achievement by awarding him the Prestwich Medal – this Medal is awarded every three years to persons 'who shall have done well for the advancement of the science of geology'. This accolade justly recognised his 60 years in the service of the geological community, teaching generations of undergraduate students, undertaking pioneering fieldwork and research, and producing many maps and memoirs of Scottish and Greenland geology. Henry was a great proponent of fieldwork, and argued powerfully and eloquently in its support - a view point he emphasized in his medal acceptance speech: 'Field work may be expensive, but to those who criticise it on those grounds I would simply say that it is an essential component of a balanced degree course and thoroughly cost effective'.

Henry mentored many undergraduate and postgraduate students throughout his six decades at Durham, many of whom went on to be scientific leaders in their own right. But he will also be remembered by all the students and colleagues who encountered him as a kind, decent and modest man who was always willing to offer the benefit of his considerable geological knowledge and experience to anyone who asked. Henry successfully supervised 18 PhD students and continued to participate actively in national and international research until very recently.

Over the years Henry was a regular attendee, and often contributor of research, at the annual VMSG meeting. He will be missed by one and all that knew him.

By Dr Mike Widdowson (Chair, VMSG)

Citation for Prestwich Medal:

<https://www.geolsoc.org.uk/About/Awards-Grants-and-Bursaries/Society-Awards/Prestwich-Medal>

See also 'News' at Durham Earth Sciences website:

<https://www.dur.ac.uk/earth.sciences/>

Notices

Fieldtrip Co-ordinator:

Janine Kavanagh has the role of fieldtrip co-ordinator for the VMSG committee, so if you are interested in running a VMSG fieldtrip, please contact her for further information at Janine.Kavanagh@liverpool.ac.uk

Upcoming awards of relevance to the VMSG community:

Do you know an outstanding member of the VMSG community? Please consider nominating them for awards and medals bestowed by other societies. Remember, these recognise both early career scientists as well as those well established.

PhD studentships:

We are collating all VMSG-related PhD studentships for dissemination. Please circulate to interested undergraduate students and others. If you want your PhD to be on the list, please let our student representative know. <http://www.vmsg.org.uk/students/phd.php>

VMSG Distribution List

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VMSG can also be found on [Twitter](#), [Facebook](#) and [LinkedIn](#). Sami Mikhail Sami Mikhail (sm342@st-andrews.ac.uk) runs the VMSG twitter account with a great range of links to papers, positions, articles/news of interest being updated on a regular basis so do follow!!

How to join or leave the group?

Go to the group homepage at www.jiscmail.ac.uk/vmsg and choose the 'Subscribe or Unsubscribe' link from that page. You will receive a confirmation email which you will need to respond to.

Editorial

Many thanks to those who have contributed to this issue. Please forward any articles, comments or notices of events, workshops and conferences before 31st January 2017, for inclusion in the next newsletter. All previous newsletters are available for download from the website.

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