



## Volcanic and Magmatic Studies Group

September 2017 Newsletter (No. 36)

### Welcome to the September VMSG newsletter!

Dear VMSG members, welcome to the quarterly VMSG newsletter and some highlights from community activities over the past few months! Within the September newsletter you will find VMSG member awards (huge congratulations to all!), student bursary reports, conference highlights and a summary of the VMSG fieldtrip to the Island of Mull. A big thank you at the outset to all those who have contributed articles and material for the current issue, always very much appreciated!

### Willy Aspinall Prize

By Steve Sparks

*Awarded for an Outstanding Paper in Applied Volcanology*

**Will Hutchison** of Oxford University (now St Andrews) is the **first** (2017) winner of the Willy Aspinall Prize.



The Prize is to be given annually to the lead author of an outstanding paper on applied volcanology published (in English) within three years of the lead author being awarded a PhD at a university in the UK. Will has been given the Award for his 2016 paper in *Geochemistry, Geophysics, Geosystems* entitled “**Causes of unrest at silicic calderas in the East African Rift: New constraints from InSAR and soil-gas chemistry at Aluto volcano, Ethiopia**”. Open access article [link](#).

The award takes the form of a cash prize (£400), a certificate, and a contribution towards attendance at the annual meeting of the Volcanic and Magmatic Studies Group (VMSG) of the Geological Society and the Mineralogical Society (held in January each year) where the winner will be invited to present their paper.

The Prize is named in honour of Prof. Willy Aspinall who is a distinguished professor at the University of Bristol and a hazard and risk science consultant. The Prize has been made possible through generous donations, including by Professor Aspinall and Dr Gordon Woo.

**From Will:** ‘I am thrilled to have been awarded the inaugural Aspinall Prize for my paper on volcanic unrest in Ethiopia! The paper owes a great deal to Willy’s detailed assessment of volcanic hazards in developing countries and it is an honour to have my work recognized by the VMSG community.’

### IAVCEI General Assembly Highlights

By Rebecca Coates

August 2017 saw the return of the quadrennial IAVCEI conference, this time in Portland, Oregon. The VMSG community was there in force with two of its members, Yan Lavallée (University of Liverpool) and Marie Edmonds (University of Cambridge), winning the prestigious Wager medal. The medal recognises scientists, within 15 years of acquiring their PhD, who have made a significant contribution to the field of volcanology.

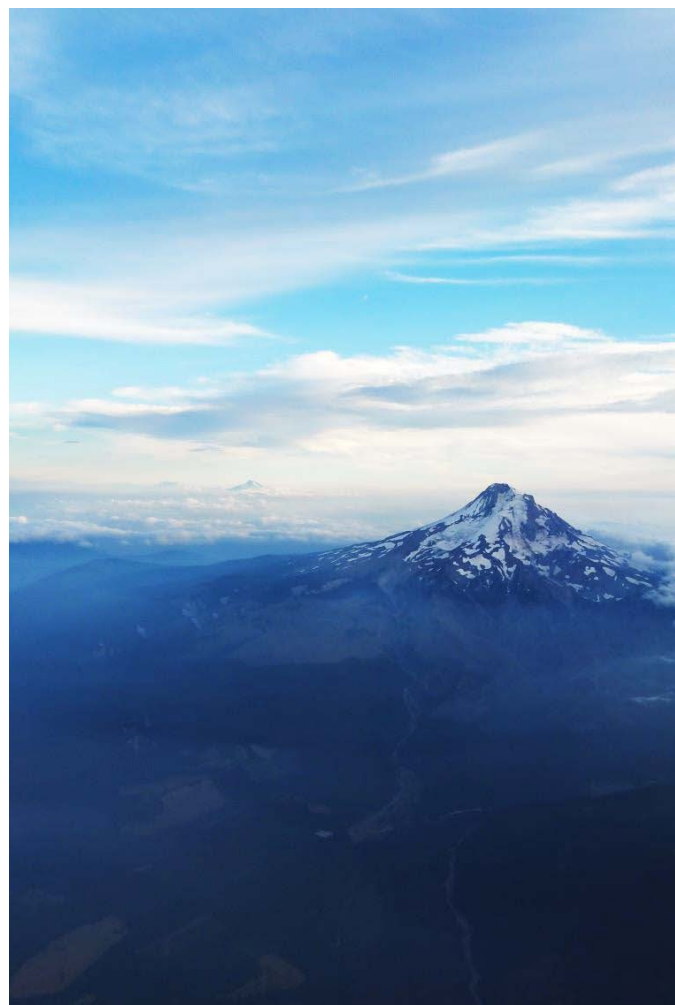
The conference was well organised and saw many events that brought together volcanological communities from across the globe. Each day was full of exciting talks which ended with busy poster sessions, fuelled with local IPAs. The evenings were also action filled, with a different Early Career event running almost every night. However, the highlight for most was likely the mid-conference field trips, where teams of coaches disappeared to Mount St Helens, Mount Hood and to the Columbia River Flood Basalts for the day.



*Marie (left) and Yan (right) receiving awards at IAVCEI. Photo credit: Jackie Kendrick.*



*Mid-conference field trip: Volcanologists stare in awe at the impressive horse-shoe shaped crater at Mt St Helens, left by the devastating 1980 eruption. Photo credit: Jackie Kendrick.*



*A view from above: the Cascades greeting us as we fly into Portland. In the foreground is Mt Hood, with Mt Jefferson, then Mt Bachelor in the background. Photo credit: Becky Coats.*



*Pink Martini entertain the crowd at Crystal Ballroom. Photo Credit: Jackie Kendrick.*

The conference ended with a memorable farewell party in the Crystal Ballroom with music from the infamous swing band, Pink Martini.

IAVCEI will return, as part of IUGG, in 2019 in Montreal, Canada. The next solo IAVCEI will be held in 2021 in New Zealand.



## Goldschmidt Conference Highlights

By Sami Mikhail

This year's Goldschmidt in Paris (France) was a blast. This is despite the fact that many of our VMSG friends and colleagues were attending the IAVCEI meeting in Portland, Oregon (USA) - which ran in parallel! Despite this epic clash of the conferences, there were still many VMSG members, and VMSG-related sessions (albeit, more of the M than the V). These covered topics like OIB, MORB, and arc magmatism, mantle geochemistry, volcanic- and magmatic-related ore deposits, and magmatic geoscience throughout the solar system.

The most VMSG-related piece of news is congratulatory, one of our own - Dr Julie Prytulak (Imperial College) - was awarded the 2017 Houtermans award! This award recognises a single exceptional contribution to geochemistry, published as a single paper or a series of papers on a single topic. I think we can all agree, Julie's contributions to VMSG-related science using non-traditional stable isotopes (i.e. vanadium, thallium) have all been incredible, and Julie is a most deserving recipient. For those interested, I interviewed Julie after she received her awards to get the opinion on what it feels like to receive the Houtermans award, what she does outside of science, what she identifies as the major challenge to early-career scientists, and where she'd go if she had a time machine ([link](#)).



*Julie Prytulak received the 2017 Houtermans award.*

## VMSG Fieldtrip to Mull

Kate Dobson has kindly provided a summary of the VMSG fieldtrip which is included as the last page of the newsletter. Both Kate and I would like to extend special thanks to Malcolm Hole, Jeremy Preston and Tara Stephens for helping with various parts of the trip along with everyone who attended and contributed to the many discussions!



*Hebridean sun followed by torrential rain. The group at Knockvologan and after the Carsaig Bay 'stream' crossing. Photo credit: Marcus Duffy (inset).*

## Student Bursary Reports

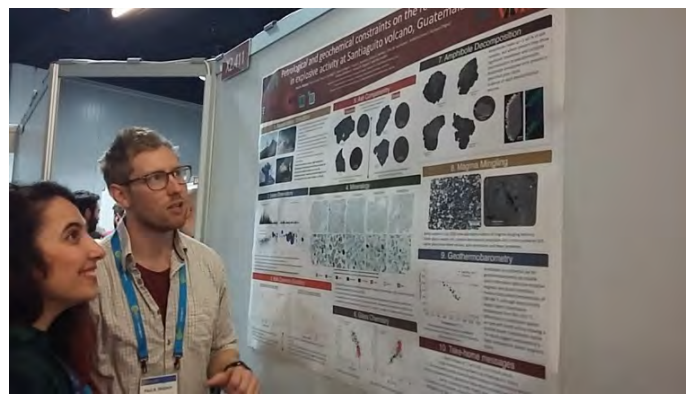
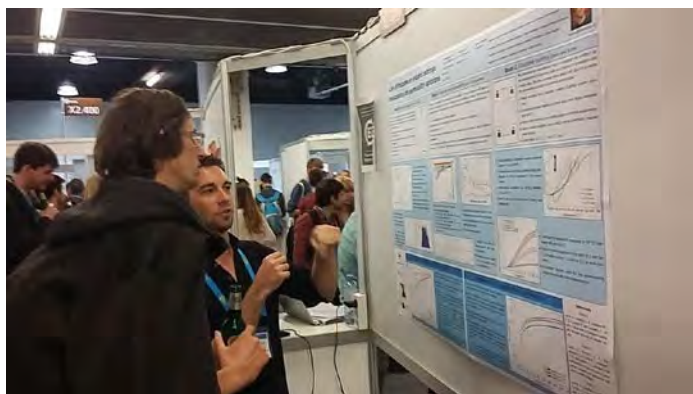
Within this section, short reports are included that have been sent in by PhD students who received VMSG bursary funding to attend conferences. The community can be very proud of the number of bursary applications that were able to be funded through the VMSG and the opportunities that these have been able to support. Congratulations to all the attendees for the impressive range of top science encompassed within the conference contributions summarized below!

### EGU General assembly 2017 conference

24/04/17 – 28/04/17

**Attendee:** Anthony Lamur

**Affiliation:** University of Liverpool



The EGU General assembly took place from the 24<sup>th</sup> to the 28<sup>th</sup> of April 2017 in Vienna, Austria. With an exceptional number of 14496 attendees, this conference provided a unique opportunity to widen my scientific network. The scientific programme, comprising 649 individual sessions, allowed me to attend interesting talk and poster sessions focusing either on volcanology or on more fundamental rock mechanics. I also had the opportunity to convene a session for the second time at an international conference (EMRP1.4: *"Rock mechanics and geomechanical characterisation of rocks from micro to macro scale: the role of anisotropy and hydro-mechanical coupling"*).

On the second day of the conference, I presented in session GMPV4.2: *"Magma ascent, degassing and eruptive dynamics: linking experiments, models and observations"*. My poster, entitled *"Life of fractures in volcanic settings: implications for permeability variations"*, summarised the findings of my PhD project at University of Liverpool. Particular emphasis was directed to how fracture development and healing in magmas/rocks can impact fluid flow within a volcanic edifice and its implications on eruptive style. Discussions primarily focused on linking the timescales for permeability reduction due to fracture healing, as observed in my experiments, to cyclic eruptive behaviour at many silicic volcanoes.

Finally, the conference also brought me the opportunity to meet with colleagues based in different countries to discuss on-going collaborative projects.

I am therefore grateful to VMSG for awarding me this travel grant which contributed to a successful EGU conference experience.

**Attendee:** Paul Anthony Wallace

**Affiliation:** University of Liverpool

I would like to thank the Volcanic and Magmatic Studies Group for supporting my research during the 2017 European Geosciences Union held in Vienna last April. Throughout the week, I was fortunate enough to present two pieces of my PhD research as an oral and poster presentation. From experiencing EGU at the beginning of my PhD in 2016, I knew how invaluable attending this conference towards the end of my 2<sup>nd</sup> year would be and it failed to disappoint.

My oral presentation was entitled *"The influence of strain localisation on spine extrusion dynamics during the 1991-95 eruption at Unzen volcano, Japan"* and was my first talk at an international conference. This provided me with an excellent opportunity to share my field and lab based research I had been doing on Unzen volcano. I received a large amount of positive feedback, which was encouraging as this work is coming to the final stages of completion. I was also approached by other researchers in the same field area that were interested in discussing my findings further, with possible applications to other volcanoes and potential future collaborations.

My poster presentation involved recent work on the *"Petrological and geochemical constraints on the recent increase in explosive activity at Santiaguito volcano, Guatemala"*. Studying these recent changes at Santiaguito has been a multidisciplinary effort combining both seismic observations and petrological phenomena from samples erupted over the same period to build a bridge between the two fields. Feedback was encouraging and many expressing their interest in this unique dataset with the possibility of linking both physics and chemistry.

Finally, in addition to the science, the social aspect of the conference was unparalleled, allowing myself to catch up with friends and colleagues as well as meeting new ones in the process.

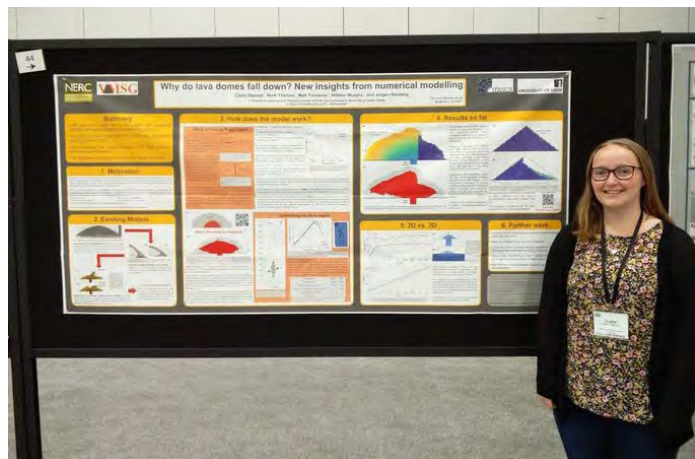


## IAVCEI 2017 Scientific Assembly

14/08/2017 – 18/08/2017

**Attendee:** Claire Harnett

**Affiliation:** University of Leeds



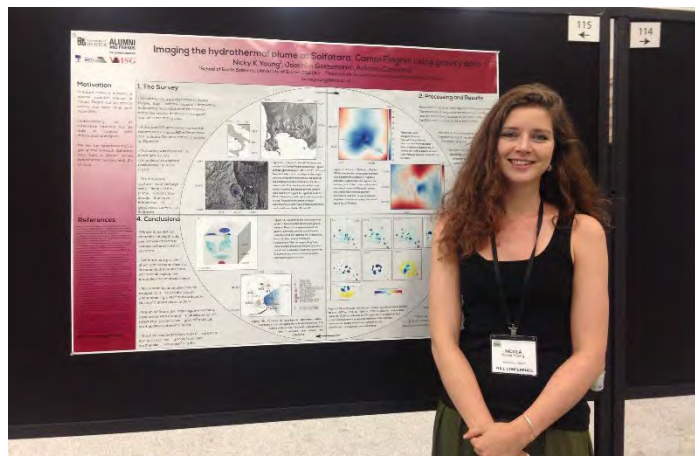
With assistance from the VMSG Conference Bursary, I attended the IAVCEI Scientific Assembly in Portland, Oregon. I presented a conference poster entitled “Why do lava domes fall down? New insights from numerical modelling.”

The poster session proved really productive and provided the opportunity to discuss my current modelling efforts with the wider volcanology community. It was useful to talk with modellers about the technical aspects of my work, and also with more applied volcanologists about relating my model to observations.

Through the combination of a valuable poster session, a mid-conference fieldtrip to Mount St. Helens, and week-long discussions with volcanologists from all over the world, I return to my PhD feeling inspired and productive! Many thanks to VMSG.

**Attendee:** Nicky Young

**Affiliation:** University of Bristol



The funding generously provided allowed me to attend IAVCEI 2017 in Portland, Oregon. This conference was a fantastic opportunity for networking, career progression and academic discussion.

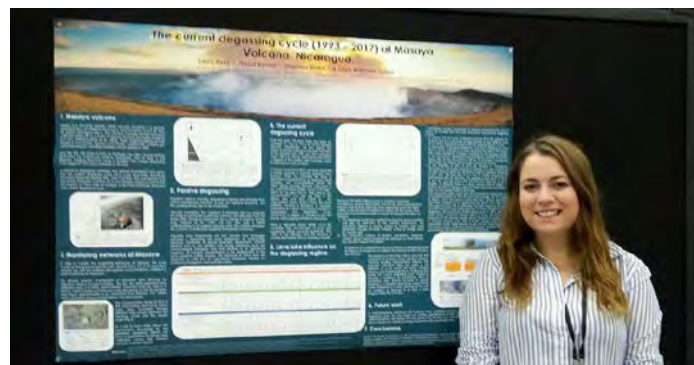
I availed of the Early Career Researcher Mentor Programme and was paired with a volcano geodesist in the USGS. She kindly introduced me to many useful contacts in the USGS and various volcano observatories. I will remain in touch with her as she has offered to help with applications I make in the USA. This is an invaluable outcome of this conference. I also attended all Early Career Researcher Events available, which included networking with my peers and receiving advice from established researchers about various topics including careers in academia, careers in industry, careers in the USGS and dealing with the media.

Presenting my poster allowed me to have many interesting conversations about the hydrothermal system at Campi Flegrei with experts at the same or similar hydrothermal systems. As a result I now have several contacts who are keen to continue further discussions.

This conference was clearly very useful and I am grateful to VMSG for their support, which allowed me to attend.

**Attendee:** Kerry Reid

**Affiliation:** Open University



With assistance from the VMSG Student Bursary I was able to attend my first ever international conference, IAVCEI 2017 in Portland, Oregon. At IAVCEI I presented a poster titled ‘The current degassing cycle (1993-2017) at Masaya Volcano, Nicaragua’ in the session: The role of volatiles and degassing in magmatic and eruptive processes.

During the poster session I was able to talk to influencing academics within my field, whom of which proved a great guidance, providing useful feedback for my

final stages of writing my thesis and allowed conversations to be had regarding potential future collaborations.

IAVCEI was a great experience as a young researcher, there was a wealth of talks, workshops, networking evenings and social events which really made us feel welcome and supported within the international volcanology community. It also provided a great platform to meet fellow young researchers, from which I have made some great friends from all around the world.

Not only did this bursary help me meet some helpful contacts it allowed me to visit a spectacular part of America, with fantastic volcanoes on offer. As a mid-conference field trip, I visited Mount St. Helens, which was simply amazing.

So thank you for helping me attend this wonderful conference and allowing me to tick one of the big volcanoes off my list!

**Attendee:** Rebecca Coats

**Affiliation:** University of Liverpool

Presentation title: An experimental investigation into magma rheology using natural and analogue materials

IAVCEI (International Association of Volcanology and Chemistry of the Earth's Interior) took place in Portland, OR, USA, between 14 and 18 August 2017. IAVCEI promotes an international focus on volcanology with a highlight on research and hazard mitigation, a field so broad that scientists from a range of disciplines came to work together. Attending this conference has significantly benefited the progress of my project and will, no doubt, strengthen the quality of the research I produce as I enter my final year of my PhD.

The main theme of the conference was 'Fostering integrative studies on volcanism' with a focus on integrating and intersecting disciplines and I gave an oral presentation in the session titled: II.4 Experimental volcanology: from magma generation to the transport and emplacement of pyroclastic materials. Not only did this session encompass my current research but it also gave me the opportunity to collaborate with leading geoscientists whom I would not have had the chance to meet otherwise.

As the meeting was in Portland, OR, there is a unique opportunity to visit some of the world's most iconic lava dome volcanoes and the mid conference field trip gave attendees the chance to visit the surrounding volcanoes. I went on the trip to Mt St Helens, an experience I was very grateful for. I also tagged on my own field trip which involved looking at the Inyo lava domes in Long Valley, CA. I welcomed this opportunity as the experience of exploring volcanoes in situ allows experimentalists to truly understand the scale of the challenge they are trying to solve and perhaps the methods they need to apply to do so, which is an invaluable resource.

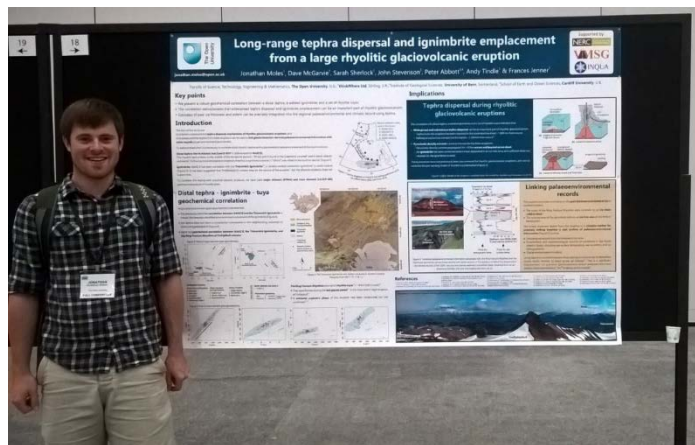
IAVCEI conferences only take place once every four years and this was my one opportunity to attend as a PhD student. Funding from VMSG gave me the chance to meet new researchers in my field outside of Europe; see outstanding number eye-opening presentations; take part in amazing field work, along with the unique opportunity to present my work to the biggest gathering of volcanologists yet.

*Photos: presenting (left), presentation title (middle), enjoying the heat in Death Valley (right).*





**Attendee:** Jonathan Moles  
**Affiliation:** Open University



With the generous support of a VMSG Travel Bursary, I was able to attend the IAVCEI 2017 Scientific Assembly in Portland, Oregon. On the first day of the conference, I presented a poster entitled 'Long-range tephra dispersal and ignimbrite emplacement from a large rhyolitic glaciovolcanic eruption.' This aspect of my PhD research aims to demonstrate the tephra dispersal processes that can occur when rhyolitic magma erupts through an ice sheet. Tephra dispersed during these eruptions can serve as precise chronostratigraphic links between the evidence of ice seen at volcanoes and, for instance, palaeoclimate records derived from ice cores.

I presented as part of the subglacial/subaqueous volcanism session and this was a great opportunity to meet glaciovolcanism researchers from around the world. It was particularly interesting to talk to people working in New Zealand and British Columbia, as well as the familiar faces of those working in Iceland. Later in the week and during the post-conference tephra workshop I had valuable discussions with members of the tephra community, and I made a number of new contacts. The workshop was a useful opportunity to gain some consensus on the up-to-date best practices and the topical issues in tephra science.

A trip to the Pacific Northwest would have been incomplete without a visit to some famous glaciated volcanoes. The mid-conference fieldtrip provided an excellent overview of Mt St Helens, and a hike on Mt Rainier was one of the highlights of my post-conference travels.

The conference came at an ideal time for me as I finalise and communicate the key findings of my PhD. It was packed with fantastic experiences and the contacts I

have made will be invaluable in the years to come. Many thanks to VMSG for their support

## Consider Submitting Your Research Paper to Upcoming Special Issue

*Sent in by Giuseppe Salerno*

Dear Colleagues,

We would like to invite you to submit papers to the special Issue, "Volcanic Plumes: Impacts on the Atmosphere and Insights into Volcanic Processes", in the peer review open access in MDPI journal Geosciences (ISSN 2076-3263; <http://www.mdpi.com/journal/geosciences> – cite score 1.67 Scopus).

This Special Issue is aimed at presenting state of the art, multi-disciplinary science concerning all aspects of volcanic plumes, of relevance to the volcanology, climatology and atmospheric science communities. Authors are encouraged to submit articles with respect to the following topics:

- Volcanic plume observation and modelling
- Volcanic degassing and aerosol
- Atmospheric impact of volcanic eruption
- Volcanoes/Climate interactions
- Eruptive processes
- Volcanic degassing dynamics

Featured authors as Alessandro Aiuppa, Stefano Corradini, Tjarda Roberts, Patrick Allard, and other colleagues have already accepted to submit a contribution for this Special Issue. Two manuscripts have been already published and others are already in review.

For further information, please visit website: [http://www.mdpi.com/journal/geosciences/special\\_issue/s/volcanic\\_processes](http://www.mdpi.com/journal/geosciences/special_issue/s/volcanic_processes)

**DEADLINE FOR MANUSCRIPT SUBMISSIONS: 15 OCTOBER 2017**

## Fermor Meeting 2017: Factory Earth

There is still just about time to register for this exciting Geolsoc meeting at Burlington House on the 25 -

27 September 2017. The conference has been arranged as part of the Geolsoc 2017 Year of Risk.

The meeting will address the fundamental controls on metal transport and deposition in magmatic systems and address questions such as:

- What role do sulfide melts play in metal transport?
- What are the key components of fertile magmas and how can they be identified?
- What role do volatiles and semi-metals play in transporting and depositing metals?
- How are ore metals concentrated during magmatic differentiation and transferred to the hydrothermal environment?

<https://www.geolsoc.org.uk/fermor17>

## 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](mailto: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

The VMSG mailing list is managed by jisc-mail. As a list member, you can subscribe to the list or change all your details yourself by subscribing to jisc-mail.

VMSG can also be found on [Twitter](#), [Facebook](#) and [LinkedIn](#).

### **How to join or leave the group?**

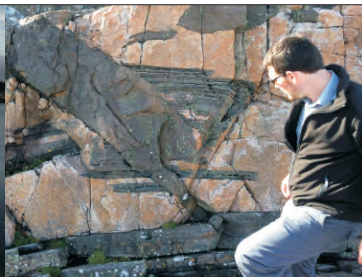
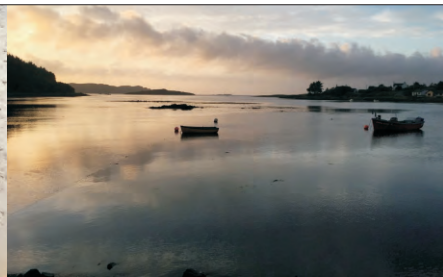
Go to the group homepage at [www.jiscmail.ac.uk/vmsg](http://www.jiscmail.ac.uk/vmsg) and choose the 'Subscribe or Unsubscribe' link from that page. You will receive a confirmation email which you will need to respond to.

## Editorial

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

*Dr John Millett* ([john.millett@abdn.ac.uk](mailto:john.millett@abdn.ac.uk) or [john.millett@vbpr.no](mailto:john.millett@vbpr.no))





# VMSG Mull Field Trip

4-9th September 2017

Thanks to all 16 enthusiastic people who came on the Mull Field trip. Once everyone actually made it to the island (after a small mismatch between John and the Ferry timetable) the fairly horrific weather forecasts proved wrong for the first couple of days, and our boat trip out to Staffa showed the lavas off to their very best. With lunch in the sunshine at Knockvologan, and an afternoon looking at magma mixing in the Ross of Mull granite and the contact between the granite and the Moine country rocks the first day was a great intro to all aspects of the Geology of Mull. Discussions covered all sorts of magmatic and geological processes, from rheology to crystal growth to major crustal structures, chronology and emplacement depths... after which we really needed dinner and a pint of the local beer! Day 2 was for sills... starting with an overview of emplacement mechanisms as we traversed along the coast from Scoor to the Assapol Fault, and crossed from the intruded Moine basement into the Palaeogene lava sequences and the sedimentary units interbedded within them. Day 3 the weather broke.... with a vengeance and we spent the morning swimming... well wading through swollen streams to visit the Rubh' a'Chomain sill, and some arm waving and geochemistry in the rain (see photo above). The rain may have eased for the hike back, but the streams were in full flood and so the group had one dry foot between us by the time we reached the vans. Luckily, the last day was a tour of the island & damp boots weren't too much of a problem, especially after looking at the Calgary lavas and having fish and chips at Tobemory!

