JAMIE FARQUHARSON

jifarquharson.github.io jifarq89@googlemail.com /in/jamie-farquharson /jifarquharson

EXPERIENCE

Niigata University — **Sep 2023 – present**
Specially appointed Professor — *Japan*

Université de Strasbourg — **Jul 2022 – Jun 2023**
Journal manager — *France*

Lancaster University — **Jun 2021 – Sep 2021**
Honorary Researcher — *UK*

Stallard Scientific Editing — **Apr 2021 – Jul 2022**
Freelance Scientific Editor — *NZ*

University of Miami — **Apr 2018 – Apr 2021**
Post-doctoral Research Associate — *USA*

Université de Strasbourg — **Nov 2017 – Apr 2018**
Course Lecturer — *France*

Université de Strasbourg — **Nov 2016 – Apr 2018**
Post-doctoral Research Associate — *France*

Universidad de Colima — **Nov 2011 – Mar 2012**
Research Assistant — *Mexico*

EDUCATION

Université de Strasbourg — **2013 – 2016**
PhD., Geophysics (Experimental Volcanology); *Exceptional* — *France*

Lancaster University — **2012 – 2013**
M.Sc., Volcanology and Geological Hazards; *Distinction* — *UK*

University of Stirling — **2007 – 2011**
B.Sc.(Hon.), Environmental Geography; *First class* — *UK*

AWARDS AND HONOURS

Award for Outstanding Editorial or Publishing Contribution — **2023**
Association of Earth Science Editors — *USA*

Zeiss Post-doctoral Keynote Award — **2021**
Volcanic and Magmatic Studies Group — *UK*

Prix de thèse [*Thesis prize*] — **2017**
Societé des Amis des Universités de l'Académie de Strasbourg — *France*

"Best Dissertation" prize — **2013**
Lancaster Environment Center — *UK*

University Medal — **2011**
Royal Scottish Geographical Society — *UK*

RECENT FUNDING

"Investigating reactive fluid transport in volcanic systems" — **2023**
UKRI NERC Independent Research Fellowship [*declined by applicant*] — *UK*

"Growing an innovative community open access testbed in the Earth Sciences" — **2021**
€45k; Fonds National pour la Science Ouverte [*National Funds for Open Science*] — *France*

Recent keynotes and invited talks

"*Climate change, extreme weather events, and volcanic hazards*" **June 2023**
University of Edinburgh EPS Geoscience seminar *UK*

"*An open science testbed for volcanology*" **Dec 2021**
American Geophysical Union Fall meeting *USA*

"*Fluid transport in volcanoes: from micro- to macro-scale*" **Oct 2021**
Paris École normale supérieure, Geosciences invited seminar *UK*

"*Rainfall-induced volcanic hazard in a changing climate*" **May 2021**
University of East Anglia Atmospheres, Oceans and Climate seminar series *UK*

"*Pore fluid pressure evolution in volcanic environments: the role of rainfall*" **Apr 2021**
European Geosciences Union meeting *UK*

"*Volcanica: A success story for diamond open access publishing in geoscience*" **Feb 2021**
Montana State University's ESCI Spring Department Seminar *UK*

"*Assessing rainfall-induced volcanic hazard*" **Jan 2021**
Volcanic and Magmatic Studies Group Zeiss Keynote *UK*

"*Fire and rain: exploring the links between weather, climate, and volcanism*" **Jan 2021**
Leicester Literary and Philosophical Society Winter Seminar Series *UK*

Service

- Founder and Editor-in-Chief of Volcanica
- Elective board member of the Free Journal Network
- Senior Advisory Council member for EarthArXiv
- Elective member of the IAVCEI ECR-Net working group
- Reviewer for 20+ scholarly journals
- Outreach initiatives, such as the Scientist in Every Florida School program.

Select Publications

Farquharson, J. I., H. Tuffen, F. B. Wadsworth, J. M. Castro, H. Unwin, and C. I. Schipper, 2022. In-conduit capture of sub-micron volcanic ash particles via turbophoresis and sintering. *Nature Communications.* DOI: 10.1038/s41467-022-32522-7.

Farquharson, J. I. and F. Amelung, 2022. Volcanic hazard exacerbated by future global warming–driven increase in heavy rainfall. *Royal Society Open Science.* DOI: 10.1098/rsos.220275.

Farquharson, J. I., & F. Amelung, 2020. Extreme rainfall triggered the 2018 rift eruption at Kīlauea Volcano. *Nature*. DOI: 10.1038/s41586-020-2172-5. [Cover feature]

Farquharson, J. I., B. Wild, A. R. L. Kushnir, M. J. Heap, P. Baud, & B. Kennedy, 2019. Acid-induced dissolution of andesite: evolution of permeability and strength. *JGR: Solid Earth*. DOI: 10.1029/2018JB016130.

Farquharson, J. I., M. J. Heap, N. Varley, P. Baud, & T. Reuschlé, 2015. Permeability and porosity relationships of edifice-forming andesites: A combined field and laboratory study. *J. Volcanol. Geoth. Res.* DOI: 10.1016/j.jvolgeores.2015.03.016.

Memberships

- American Geophysical Union (AGU)
- European Geosciences Union (EGU)
- The American Ceramic Society (ACerS)
- Association of Earth Science Editors (AESE)
- Asia Ocean Geosciences Society (AOGS)
- International Association of Volcanology and Chemistry of the Earth's Interior (IAVCEI).
- Volcanological Society of Japan (日本火山学会)

Teaching Experience

M.Sc. level
• Petrophysics
• Brittle microstructure
• Applied rock physics

• Geophysical laboratory measurements.
Ph.D. level
• Geological Hazards
• Physical Volcanology.

Metrics and Impact

- h-index: 22
- i10-index: 26
- citations: 1565

My research featured in 90+ news articles in 2020, including *NPR*, *New York Times*, *New Scientist*, and *VICE*. See more via Impactstory: 0000-0003-4933-2607.

Full list of Publications

[34] Heap, M.J., C. Harnett, **J. I Farquharson**, P. Baud, M. Rosas-Carbajal, J.-C. Komorowski,M. E. Violay, H. A. Gilg, and T. Reuschlé, 2023. The influence of water-saturation on the strength of volcanic rocks and the stability of lava domes. *Journal of Volcanology and Geothermal Research*. DOI: https://doi.org/10.1016/j.jvolgeores.2023.107962.

[33] Wadsworth, F.B., E. W. Llewellin, J. M. Castro, H. Tuffen, C. I. Schipper, J. E. Gardner, J. Vasseur, A. Foster, D. E. Damby, I. M. McIntosh, S. Boettcher, H. E. Unwin, M. J. Heap, **J. I. Farquharson**, D. B. Dingwell, K. Iacovino, R. Paisley, C. Jones, and J. Whattam, 2022. A reappraisal of explosive–effusive silicic eruption dynamics: syn-eruptive assembly of lava from the products of cryptic fragmentation. *Journal of Volcanology and Geothermal Research*, DOI: https://doi.org/10.1016/j.jvolgeores.2022.107672.

[32] **Farquharson, J. I.**, H. Tuffen, F. B. Wadsworth, J. M. Castro, H. Unwin, and C. I. Schipper, 2022. In-conduit capture of sub-micron volcanic ash particles via turbophoresis and sintering. *Nature Communications.* DOI: https://doi.org/10.1038/s41467-022-32522-7

[31] **Farquharson, J. I.** and F. Amelung, 2022. Volcanic hazard exacerbated by future global warming–driven increase in heavy rainfall. *Royal Society Open Science.* DOI: https://dx.doi.org/10.1098/rsos.220275.

[30] Tuffen, H., **J. I. Farquharson**, F. B. Wadsworth, C. Webb, J. Owen, J. Castro, K. Berlo, C. I. Schipper, and K. Wehbe, 2022. Mid-loaf crisis: Internal breadcrust surfaces in rhyolitic pyroclasts reveal dehydration quenching. *Geology.* DOI: https://doi.org/10.1130/G49959.1.

[29] Aubry, T., **J. I. Farquharson**, C. Rowell, S. Watt, V. Pinel, F. Beckett, J. Fasullo, P. Hopcroft, D. Pyle, A. Schmidt, and J. Staunton Sykes, 2022. Impact of climate change on volcanic processes: current understanding and future challenges. *Bulletin of Volcanology.* DOI: https://doi.org/10.1007/s00445-022-01562-8.

[28] Wadsworth, F. B., E. W. Llewellin, **J. I. Farquharson**, J. Gillies, A. Loisel, L. Frey, E. Ilyinskaya, T. Thordarson, S. Tramontano, E. Lev, M. Pankhurst, A. Galdeano Rull, M. Asensio-Ramos, Nemesio M. Pérez, P. Hernandez Perez, D. Calvo Fernández, M. Carmen Solana, U. Kueppers, A. Polo Santabárbara, 2022. Crowd-sourced observations of volcanic eruptions: The 2021 Fagradalsfjall and Cumbre Vieja events. *Nature Communications.* DOI: https://doi.org/10.1038/s41467-022-30333-4.

[27] Chevrel, O., Wadsworth, F., **Farquharson, J.**, Kushnir, A., Heap, M., Williams, R., Delmelle, P. and Kennedy, B., 2021. Publishing a Special Issue of Reports from the volcano observatories in Latin America: Editorial to Special Issue on Volcano Observatories in Latin America. *Volcanica.* DOI: https://doi.org/10.30909/vol.04.S1.ivi.

[26] Wadsworth, F. B., Vossen, C. E. J., Heap, M. J., Kushnir, A. R. L., **Farquharson, J. I.**, Schmid, D., Dingwell, D. B., Belohlavek, L., Huebsch, M., Carbillet, L., and Kendrick, J. E., 2021. The force required to operate the plunger on a French press. *American Journal of Physics.* DOI: https://doi.org/10.1119/10.0004224.

[25] **Farquharson, J. I.**, A. R. L. Kushnir, B. Wild, and P. Baud, 2020. Physical property evolution of granite during experimental chemical stimulation. *Geothermal Energy.* DOI: https://doi.org/10.1186/s40517-020-00168-7.

[24] **Farquharson, J. I.** and F. Amelung, 2020. Extreme rainfall triggered the 2018 rift eruption at Kīlauea Volcano. *Nature.* DOI: https://doi.org/10.1038/s41s586-020-2172-5.
</> https://doi.org/10.5281/zenodo.3635944

[23] Heap, M. J., M. Villeneuve, F. Albino, **J.I. Farquharson**, E. Brothelande, F. Amelung, J.-L. Got, and P. Baud, 2019. Towards more realistic values of elastic moduli for volcano modelling. *J. Volcanol. Geoth. Res.* DOI: https://doi.org/10.1016/j.jvolgeores.2019.106684.

[22] Mordensky, S. P., M. J. Heap, B. M. Kennedy, H. A. Gilg, M. C. Villeneuve, **J. I. Farquharson**, and D. M. Gravley, 2019. Influence of alteration on the mechanical behaviour and failure mode of andesite: implications for shallow seismicity and volcano monitoring. *Bull. Volcanol.* DOI: https://doi.org/10.1007/s00445-019-1306-9.

[21] Narock, T., E. Goldstein, C. A.-L. Jackson, A. Bubeck, A. Enright, **J. I. Farquharson**, A. Fernandez, D. Fernández-Blanco, S. Girardclos, D. E. Ibarra, and S. Lengger, 2019. Earth Science is Ready for Preprints. *Eos.* DOI: https://doi.org/10.1029/2019EO121347.

[20] **Farquharson, J. I.**, B. Wild, A. R. L. Kushnir, M. J. Heap, P. Baud, and B. Kennedy, 2019. Acid-induced dissolution of andesite: evolution of permeability and strength. *J. Geophys. Res. Solid Earth* DOI: https://doi.org/10.1029/2018JB016130.

[19] Heap, M. J., M. C. Villeneuve, A. R. L. Kushnir, **J. I. Farquharson**, P. Baud, and T. Reuschlé, 2018. Rock mass strength and elastic modulus of the Buntsandstein: An important lithostratigraphic unit for geothermal exploitation in the Upper Rhine Graben. *Geothermics.* DOI: https://doi.org/10.1016/j.geothermics.2018.10.003.

[18] Mordensky, S. P., M. C. Villeneuve, **J. I. Farquharson**, B. M. Kennedy, M. J. Heap, and D. M. Gravely, 2018. Rock mass properties and edifice strength data from Pinnacle Ridge, Mt. Ruapehu, New Zealand. *J. Volcanol. Geoth. Res.* DOI: https://doi.org/10.1016/j.jvolgeores.2018.09.012.

[17] **Farquharson, J. I.**, and F.B. Wadsworth, 2018. Upscaling permeability anisotropy in volcanic systems. *J. Volcanol. Geoth. Res.* DOI: https://doi.org/10.1016/j.jvolgeores.2018.09.002.

[16] **Farquharson, J. I.**, and F.B. Wadsworth, 2018. Introducing Volcanica: The first diamond open-access journal for volcanology. *Volcanica.* DOI: https://doi.org/10.30909/vol.01.01.i-ix.

[15] Heap, M. J., **J. I. Farquharson**, A. R. L. Kushnir, Y. Lavallée, P. Baud, H. A. Gilg, and T. Reuschlé, 2018. The influence of water on the strength of Neapolitan Yellow Tuff, the most widely used building stone in Naples (Italy). *Bull. Volcanol.* DOI: https://doi.org/10.1007/s00445-018-1225-1.

[14] Heap, M. J., T. Reuschlé, **J. I. Farquharson**, and P. Baud, 2018. Permeability of volcanic rocks to gas and water. *Journal of Volcanology and Geothermal Research.* DOI: https://doi.org/10.1016/j.jvolgeores.2018.02.00.

[13] Mordensky, S. P., M.C.Villeneuve, B. M. Kennedy, M. J. Heap, D. M. Gravley, **J. I. Farquharson**, and T. Reuschlé, 2018. Physical and mechanical property relationships of a shallow intrusion and volcanic host rock, Pinnacle Ridge, Mt. Ruapehu, New Zealand. *J. Volcanol. Geoth. Res.* DOI: https://doi.org/10.1016/j.jvolgeores.2018.05.020.

[12] **Farquharson, J. I.**, F.B. Wadsworth, M. J. Heap, and P. Baud, 2017. Time-dependent permeability evolution in compacting volcanic fracture systems and implications for gas overpressure. *J. Volcanol. Geoth. Res.* DOI: https://doi.org/10.1016/j.jvolgeores.2017.04.025 </> https://github.com/jifarquharson/FRACkR.

[11] **Farquharson, J. I.**, P. Baud, and M. J. Heap, 2017. Inelastic compaction and permeability evolution in volcanic rock. *Solid Earth.* DOI: https://doi.org/10.5194/se-8-561-2017.

[10] Heap, M.J., B.M. Kennedy, **J. I. Farquharson**, J. Ashworth, K. Mayer, M. Letham-Brake, T. Reuschlé, H.A. Gilg, B. Scheu, Y. Lavallée, P. Siratovich, J. Cole, A.D. Jolly, P. Baud, and D.B. Dingwell, 2016. A multidisciplinary approach to quantify the permeability of the Whakaari/White Island volcanic hydrothermal system (Taupo Volcanic Zone, New Zealand). *J. Volcanol. Geoth. Res.* DOI: https://doi.org/10.1016/j.jvolgeores.2016.12.004.

[9] **Farquharson, J. I.**, M. J. Heap, P. Baud, 2016. Strain-induced permeability increase in volcanic rock. *Geophys. Res. Lett.* DOI: https://doi.org/10.1002/2016GL071540.

[8] **Farquharson, J. I.**, M. J. Heap, Y. Lavallée, N. R. Varley, P. Baud, 2016. Evidence for the development of permeability anisotropy in lava domes and volcanic conduits. *J. Volcanol. Geoth. Res.* OI: https://doi.org/10.1016/j.jvolgeores.2016.05.007.

[7] **Farquharson, J. I.**, M. J. Heap, P. Baud, T. Reuschlé, N. R. Varley, 2016. Pore pressure embrittlement in a volcanic edifice. *Bull. Volcanol.* DOI: https://doi.org/10.1007/s00445-015-0997-9.

[6] **Farquharson, J. I.**, M. James, H. Tuffen, 2015. Examining rhyolite lava flow dynamics through photo-based 3D reconstructions of the 2011–2012 lava flowfield at Cordon-Caulle, Chile. *J. Volcanol. Geoth. Res.* DOI: https://doi.org/10.1016/j.jvolgeores.2015.09.004.

[5] Heap, M. J., **J. I. Farquharson**, F. B. Wadsworth, S. Kolzenburg, and J. K. Russell, 2015. Timescales for permeability reduction and strength recovery in densifying magma. *Earth Plan. Sci. Lett.* DOI: https://doi.org/10.1016/j.epsl.2015.07.053.

[4] Heap, M. J., **J. I. Farquharson**, P. Baud, Y. Lavallée, and T. Reuschlé, 2015. Fracture and compaction of andesite in a volcanic edifice. *Bull. Volcanol.* DOI: https://doi.org/10.1007/s00445-015-0938-7.

[3] **Farquharson, J. I.**, M. J. Heap, N. Varley, P. Baud, and T. Reuschlé, 2015. Permeability and porosity relationships of edifice-forming andesites: A combined field and laboratory study. *J. Volcanol. Geoth. Res.* DOI: https://doi.org/10.1016/j.jvolgeores.2015.03.016.

[2] Heap, M. J., B. Kennedy, N. Perrin, L. Jacquemard, P. Baud, **J. I. Farquharson**, B. Scheu, Y. Lavallée, H. A. Gilg, M. Letham-Brake, K. Mayer, A. D. Jolly, T. Reuschlé, and D. B. Dingwell, 2015. Mechanical behaviour and failure modes in the Whakaari (White Island volcano) hydrothermal system, New Zealand. *J. Volcanol. Geoth. Res.* DOI: https://doi.org/10.1016/j.jvolgeores.2015.02.012.

[1] Heap, M. J., S. Kolzenburg, J. K. Russell, M. E. Campbell, J. Welles, **J. I. Farquharson**, A. Ryan, 2014. Conditions and timescales for welding block-and-ash flow deposits. *J. Volcanol. Geoth. Res.* DOI: https://doi.org/10.1016/j.jvolgeores.2014.11.010.