Curriculum Vitae

Dr. Jackie E. Kendrick
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Employment History

June 2014 - Present	Postdoctoral research associate SLiM, University of Liverpool.
May 2013- May 2014	Research Laboratory Technician, University of Liverpool.
2010 - April 2013	High-T laboratory coordinator, Ludwig-Maximilian-University, Munich.
2009 - 2010	Hire Manager, Moss Bros, Hereford.
Summer 2009	Volunteer, USGS Cascade Volcano Observatory, USA.
2006 - 2009	Events Operative, Conference Link, Imperial College London.
2006-2007	Receptionist, Kinney Green, London.

Qualifications

July 2013 PhD (Summa cum laude) Experimental Volcanology, Ludwig-Maximilian-University, Munich
Sept. 2009 MSci Geology (2:1), University College London
June 2005 A-Levels: Geology, Chemistry, Physics, Biology, General Studies, Hereford 6th Form College
June 2003 GCSE's: 13 A*-B grades, Fairfield High School, Hereford

Experimental and Analytical Experience

- High-velocity rotary shear apparatus used to study frictional properties of magmas in University of Liverpool (UoL), University of Padua and at the Kochi Institute for Core Sample Research, JAMSTEC.
- Use of high temperature, uniaxial compression and tension apparatus at UoL.
- Rheological studies using a high temperature uniaxial press at LMU, Munich.
- Strength tests using a room-temperature, uniaxial press at UCL.
- Electron back-scatter diffraction (EBSD) on volcanic rocks using both CamScan and Philips SEMs at the UoL.
- Use of continuous AE monitoring systems during magma deformation experiments.
- High-temperature furnaces for thermal stressing experiments and handling melt.
- Fragmentation threshold and permeability studies using the "fragmentation bomb" at LMU.
- FLIR infra-red imaging of experiments and explosive volcanic eruptions.
- Wavelength Dispersive electron microprobe analysis (WDA) on a CAMECA SX100 scanning electron microprobe (SEM).
- X-ray fluorescence using a Phillips Magix-Pro X-ray fluorescence spectrometer.
- Differential scanning calorimetry on a NETZSCH DSC 404 F1 Pegasus.
- Viscosity measurements by Micropenetration using a push-rod Bähr 802 V dilatometer.
- Powder X-ray diffraction using a Philips X'Pert Pro Multipurpose X-ray Diffractometer.
- Investigations into mass movement dynamics at the experimental debris-flow flume.
- Use of TinyPerm portable permeameter for in-situ measurements.
- Experience with sample preparation for above procedures.

Field Experience

- Thermal, seismic and acoustic monitoring at Pacaya volcano, Guatemala.
- Structural mapping, in-situ permeability and sample collection at Pacaya volcano, Guatemala.
- Structural investigations and in-situ permeability at Mount Unzen, Japan.
- Ash collection at Sakurajima volcano, Japan.
- Structural mapping at Glencoe, Scotland.
- Mapping of columnar jointing morphologies in basalt and sample collection in Iceland.

- Structural mapping of the dome and sample collection from block and ash flow deposits at Volcán de Colima, Mexico.
- Structural mapping and sample collection at Ceborucco volcano, Mexico.
- Preliminary fieldtrip to the "giant pumices" of La Primavera, Mexico.
- Remote monitoring and sampling at the Soufrière Hills volcano, Montserrat.
- Mapping of shear zones at Tarawera volcano, New Zealand.
- Preliminary visit and sample collection at Ngongataha volcano, New Zealand.
- Sample collection in and around Mount St. Helens, Washington in collaboration with the USGS, University College London and the University of British Colombia.
- Sample collection at Newberry Caldera, Oregon in collaboration with the USGS and US Forest Service.
- Logging of tephra deposits at Mount St. Helens with the PIRE (Partnership in Volcanological Research and Education).
- Assistance with the deployment of spiders (portable telemetered stations) at Mount St. Helens for the OASIS (Optimized Autonomous Space In-situ Sensorweb) project for hazard monitoring with USGS and the Jet Propulsion Laboratory, Caltech.
- Setting up GPS and seismic base stations at Crater Lake, Oregon with CVO.
- Mapping volcanic deposits cut by the Toutle River, Washington, with CVO.
- "Understanding impact structures" field course at Ries Crater, Germany.
- "Unravelling the Giants Causeway" in Northern Ireland.
- Structural mapping and sample collection in the crater of Mount St Helens with UCL and in collaboration with the USGS.
- Structural mapping training in the Pyrenees, Spain.
- Independent mapping project, Lake District, UK.
- Sedimentary logging, Spain.
- Mapping in the Abruzzo Mountains, Central Italy using GPR and magnetic surveys.
- Measuring density and magnetic anomalies under Campi Flegrei volcanic caldera.
- Logging of explosive volcanic deposits at Vesuvius, Italy.
- Field training - Introduction to logging and mapping, Italy.
- Field training - Introduction to structural geology, Devon and Cornwall, UK.
- Introductory field course, Isle of Wight, UK.
- Mapping in the Isle of Arran, Scotland.

Conferences, Symposia and Workshops

2014	10th Euroconference on Rock Physics and Geomechanics (Aussois, France)
	EGU (Vienna, Austria)
2013	AGU (San Francisco)
	The Signals of Magma Motion symposium (Organised, Liverpool, UK)
	IAVCEI (Kagoshima, Japan)
	UCL Johnston-Lavis workshop (London, UK)
	EGU (Vienna, Austria)
	VMSG (Bristol, UK)
2012	AGU (San Francisco, USA)
	Cities on Volcanoes 7 (Colima, Mexico)
	Goldschmidt (Montreal, Canada)
	EGU (Vienna, Austria)
2011	AGU (San Francisco, USA)
	9th Euroconference on Rock Physics and Geomechanics (Trondheim, Norway)
	Fragile Earth (Munich, Germany)
	IUGG (Melbourne, Australia)
	EGU (Vienna, Austria)
2010	AGU (San Francisco, USA)
	Melts, Magmas and Glasses (Munich, Germany)
	EGU (Vienna, Austria)
	Physico-chemical processes in seismic faults (Padova, Italy)
2009	AGU (San Francisco, USA)

GSA (Portland, USA)

Teaching

- Demonstrator for undergraduate course “Introduction to Geology for Engineers” UoL (2013).
- *Teaching Assistantship* (from the DAAD) at LMU, Munich for the Master’s level “Petrophysics” (2011/ 2012).

Additional Information

- *Registration Grant* for IAVCEI in Kagoshima, Japan (2013).
- *Registration Grant* for Cities on Volcanoes 7 in Colima, Mexico (2012).
- *Student Travel Grant* for Goldschmidt in Montreal, Canada (2012).
- Social Secretary (2008) and Year group representative (2006-2007) of the Greenough (Geology) Society at UCL.
- Member of AGU, EGU and GSA since 2008.

Publications

- Kendrick, J.E., Lavallée, Y., Ferk, A., Perugini, D., Leonhardt, R. and Dingwell, D.B., 2012, Extreme frictional processes in the volcanic conduit of Mount St. Helens (USA) during the 2004-2008 eruption, Journal of Structural Geology, 38, 61-76, http://dx.doi.org/10.1016/j.jsg.2011.10.003
- Kendrick, J.E., Lavallée, Y., Hess, K-U., Heap, M.J., Gaunt, H.E., Meredith, P. and Dingwell, D.B., 2013, Tracking the permeable porous network during strain-dependent magmatic flow, Journal of Volcanology and Geothermal Research, vol. 260, 117-126 http://dx.doi.org/10.1016/j.jvolgeores.2013.05.012
- Kendrick, J.E., Smith, R., Sammonds, P., Meredith, P., Dainty, M. and Pallister, J.S., 2013, The influence of thermal and cyclic stressing on the stability of rocks from Mount St. Helens, Bulletin of Volcanology, 75, 7, 728-740, http://dx.doi.org/10.1007/s00445-013-0728-z
- Kendrick, J.E., Lavallée, Y., Hess, K-U., De Angelis, S., Ferk, A., Gaunt, H.E., Dingwell, D.B., and Leonhardt, R., 2014, Seismogenic frictional melting in the magmatic column, Solid Earth Solid Earth, 5, 199-208. http://dx.doi.org/10.5194/se-5-199-2014
- Kendrick, J.E., Lavallée, Y., Hirose, T., Di Toro, G., Hornby, A.J., De Angelis, S. and Dingwell, D.B. Stick-slip in volcanic conduits during dome-building eruptions. In Press, Nature Geoscience, http://dx.doi.org/10.1038/ngeo2146
- Lavallée, Y., Hirose, T., Petrakova, L., Kendrick, J.E., Hornby, A.J., and Dingwell, D.B. Frictional mechanics of volcanic ash gouge. Accepted, Earth and Planetary Science Letters.
- Lavallée, Y., Heap, M.J., Kueppers, U., Kendrick, J.E. and Dingwell, D.B., The Fragility of Volcán de Colima– a material constraint, Book Chapter, In Volcán de Colima: Managing the threat, Accepted.
- Kendrick, J.E., Lavallée, Y., Mariani, E. and Dingwell, D.B., Crystal plasticity as a strain marker of the viscous-brittle transition in magmas, Being revised for *Geology*.
- Lavallée, Y., Hirose, T., Hess, K-U., Kendrick, J.E., and Dingwell, D.B., Earthquake rheology beyond frictional melting. Under Review in *PNAS*.
- Calder, E., Lavallée, Y., Bernstein, M and Kendrick, J.E., Lava dome eruptions, In Encyclopedia of Volcanoes, Sigurdsson, Houghton, Rymer, Stix, McNutt (eds.), Solicited, In Preparation.
- Hornby, A.J., Kendrick, J.E., Hirose, T., De Angelis, S., Henton De Angelis, S., Umakoshi, K., Miwa, T., Wadsworth, F., Lamb, O., Dingwell, D.B. and Lavallée, Y., Spine growth mechanisms: friction and seismicity at Mt. Unzen, Japan, In Preparation for EPSL.
- Ashwell, P.A., Kendrick, J.E., Lavallée, Y., Kennedy, B.M., Hess, K-U., Cole, J. and Dingwell, D.B., Porosity and permeability evolution in a collapsing lava dome, In Preparation for *GRL.*
- Lavallée, Y., Kendrick, J.E., Vasseur, J. and Varley, N., Blowing off steam: tuffisites as a regulator of lava dome extrusion at Volcán de Colima, In Preparation for *Bulletin of volcanology*.

Abstracts

1. Kendrick, J., Lavallée, Y., Hornby, A.J., Hirose, T., and Shimamoto, T., Failure and friction in volcanic rocks, 10th Euroconference on Rock Physics and Geomechanics, Aussois, 2014.

2. Lavallée, Y., Wadsworth, F., Vasseur, J., Kendrick, J.E. and von Aulock, F.W., Fracture and healing – an efficient geological process, 10th Euroconference on Rock Physics and Geomechanics, Aussois, 2014.
3. Hornby, A.J., Kendrick, J.E., Hirose, T., De Angelis, S., and Lavallée, Y., Mechanical properties of lava dome products: from endogenous dome building to effusion at Santiaguito volcano, Guatemala Abstract, 10th Euroconference on Rock Physics and Geomechanics, Aussois, 2014.
4. Schaefer, L., Kendrick, J.E., Oommen, T. and Lavallée, Y., Assessment of rock properties and slope stability at Pacaya Volcano, Guatemala, Abstract, EGU, Vienna, 2014.
5. Iddon, F., Hornby, A.J., Kendrick, J.E., Wadsworth, F., von Aulock, F.W., and Lavallée, Y., Columnar Jointing Thermo-Mechanics, Abstract, EGU, Vienna, 2014.
6. Lavallée, Y., Wadsworth, F., Vasseur, J., Kendrick, J.E. and von Aulock, F.W., Fracture and healing cycles in glass, Abstract, EGU, Vienna, 2014.
7. Hornby, A.J., Kendrick, J.E., Hirose, T., De Angelis, S., Henton De Angelis, S., Umakoshi, K., Miwa, T., Wadsworth, F., Dingwell, D.B. and Lavallée, Y., Spine growth mechanisms: friction and seismicity at Mt. Unzen, Japan, Abstract, EGU, Vienna, 2014.
8. Kendrick, J.E., Lavallée, Y., Hirose, T., di Toro, G., Hornby, A.J., De Angelis, S., Henton De Angelis, S., Ferk, A., Hess, K-U., Leonhardt, R., and Dingwell, D.B., Seismogenic frictional melting in the magmatic column as the driving force of stick-slip motion, Abstract, AGU, San Francisco, 2013.
9. Henton De Angelis, S., Lavallée, Y., Kendrick, J.E., Hornby, A.J., von Aulock, F.W., Clesham, S., Hirose, T., Perugini, D., Frictional melting dynamics in the upper conduit: A chemical answer to a complex physical question, Abstract, AGU, San Francisco, 2013.
10. Kendrick, J.E., Lavallée, Y., Hirose, T., di Toro, G., Hornby, A.J., Ferk, A., Hess, K-U., Leonhardt, R., and Dingwell, D.B., Volcanic pseudotachylyte and self-driven stick-slip motion, Abstract, IAVCEI, Kagoshima, Japan, 2013.
11. Kendrick, J.E., Lavallée, Y., Mariani, E. and Dingwell, D.B., Crystal plasticity as a strain marker of the viscous-brittle transition in magmas, Abstract, IAVCEI, Kagoshima, Japan, 2013.
12. Hornby, A.J., Kendrick, J.E., Hirose, T., De Angelis, S., Henton De Angelis, S. and Lavallée, Y., Frictional control on spine growth at Mt. Unzen, Japan, Abstract, IAVCEI, Kagoshima, Japan, 2013.
13. Lavallée, Y., Kendrick, J.E., Hornby, A.J., Vasseur, J., Rhodes, E., von Aulock, F.W., Varley, N.R., Kennedy, B., and Dingwell, D.B., Lava dome structures and their significance, Abstract, IAVCEI, Kagoshima, Japan, 2013.
14. Kendrick, J.E., Lavallée, Y., Hirose, T., di Toro, G., Hornby, Hess, K-U., and Dingwell, D.B.,Frictional melting and stick-slip behaviour in volcanic conduits (SOLICITED), Abstract, EGU, Vienna, 2013.
15. Kendrick, J.E., Lavallée, Y., Petrakova, L., Ferk, A., Di Toro, G., Hess, K-U., Ferri, F., Dingwell, D.B., Pseudotachylyte formation in volcanic conduits: Montserrat vs. Mount St. Helens, Abstract, AGU, San Francisco, 2012.
16. Lavallée, Y., Kendrick, J.E., Petrakova, L., Mitchell, T.M., Heap, M.J., Hirose, T., Di Toro, G., Hess, K-U., Dingwell, D.B., Frictional processes in volcanic conduits, Abstract, AGU, San Francisco, 2012.
17. Ashwell, P., Kendrick, J.E., Lavallée, Y., Kennedy, B., Hess, K-U., Cole, J.W., Dingwell, D.B., Microfracture development and foam collapse during lava dome growth, Abstract, AGU, San Francisco, 2012.
18. Lavallée, Y., Varley, N., Kendrick, J.E., Vasseur, J., Kolzenburg, S., Heap, M.J., Russell, J.K., Meredith, P., Dingwell, D.B., Tuffisite formation – Regulating lava dome extrusion at Volcán de Colima, Abstract, Cities on Volcanoes, Colima, 2012.
19. Kendrick, J.E., Lavallée, Y., Mariani, E., Gaunt, H.E., Heap, M.J., Hess, K.U., and Dingwell, D.B., High temperature deformation of crystalline magma from Volcán de Colima, Abstract, Cities on Volcanoes, Colima, 2012.
20. Kendrick, J.E., Lavallee, Y., Petrakova, L., Di Toro, Giulio and Dingwell, D.B., Frictional Melting in Volcanoes, Abstract, Goldschmidt, Montreal, 2012.
21. Kendrick, J.E., Ashwell, P.A., Lavallee, Y., Kennedy, B.M., Hess, K.U., Von Aulock, F.W., Cole, J. and Dingwell, D.B., Experimental compaction of pumiceous dome lavas, Abstract, EGU, Vienna, 2012.
22. Kendrick, J.E., Lavallée, Y., Mariani, E., Cordonnier, B., Heap, M.J., Gaunt, H.E., Hess, K.U., Flaws, A. and Dingwell, D.B., Quantifying deformation in crystalline magma using EBSD, Abstract, AGU, San Francisco, 2011.
23. Lavallée, Y., Mitchell, T. M., Heap, M.J., Kendrick, J.E., Kennedy, B., Ashwell, P.A., Hirose, T. and Dingwell, D.B., Comminution and frictional melting in volcanic conduits, Abstract, AGU, San Francisco, 2011.

24. Ashwell, P., Kendrick, J. E., Lavallee, Y., Kennedy, B., Hess, K., von Aulock, F. W., Cole, J. W., Dingwell, D. B. Permeability development during compaction of pumiceous dome lavas: testing the permeable foam collapse model, Abstract, AGU, San Francisco, 2011.
25. Kendrick, J.E., Lavallee, Y., Hess, K.U., Flaws, A. and Dingwell, D.B. Deformation mechanisms in crystalline magma, Abstract, 9th Euroconference on Rock Physics and Geomechanics, Trondheim, 2011.
26. Kendrick, J.E., Lavallée, Y. Mariani, E., Heap, M.J., Gaunt, H.E., Sammonds, P. and Dingwell, D.B. High-temperature magma deformation: a study from Volcán de Colima (Mexico), Abstract, Fragile Earth, Munich, 2011.
27. Kendrick, J.E., Lavallée, Y., Ferk, A., Perugini, D., Leonhardt, R. and Dingwell, D.B., 2011, Extreme Frictional Processes at the Conduit Margin during the 2004-2008 volcanic eruption of Mount St. Helens (USA), Abstract, IUGG, Melbourne, 2011.
28. Kendrick, J.E., Lavallée, Y. Mariani, E., Heap, M.J. and Dingwell, D.B., 2011, What controls the ductile-brittle transition of magma? A study from Volcán de Colima (Mexico), Abstract, IUGG, Melbourne, 2011.
29. Kendrick, J.E., Mariani, E., Lavallée, Y and Dingwell, D.B., 2011, Rheology and microstructure of experimentally deformed andesites from Volcan de Colima, Mexico: an EBSD study, Abstract, EGU,Vienna, 2011.
30. Kendrick, J. E., Lavallée, Y., Dingwell, D. B., Mapping the ductile-brittle transition of magma, Abstract, AGU, San Francisco, 2010.
31. Kendrick, J.E., Dainty, M., Smith, R., Sammonds, P., Pallister, J. and Meredith, P., Cyclic pressurisation of Mount St Helens dacites and basalt. Laboratory results and implications for lava dome monitoring, Abstract, EGU, Vienna, 2010.
32. Kendrick, J.E., Constraints on the timing of deformation in Pine Creek age dacite lava domes, Mount St. Helens. Geological Society of America, Abstracts with Programs, Vol. 41, No. 7, p. 643, 2009.

Referees

- Yan Lavallée, Chair of Volcanology, University of Liverpool. ylava@liv.ac.uk
- Donald B. Dingwell, former ERC Secretary General and President of the EGU, Head of the Department of Earth and Environmental Sciences, Ludwig-Maximilians-Universität and PhD supervisor. dingwell@lmu.de
- Phillip Meredith, Professor of Rock & Ice Physics, Head of Department, Department of Earth Sciences, University College London. p.meredith@ucl.ac.uk