Curriculum Vitae: PD. Dr. rer. nat. habil. Jackie E. Kendrick

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Qualifications

October 2024	Habilitation, Mineralogy, Ludwig-Maximilians-Universität, München. Topic: *Thermophysikalisch-mechanische Prozesse und Rückkopplungen in vulkanisch-magmatischen Systemen*
July 2013	PhD (Summa cum laude), Ludwig-Maximilians-Universität, München. Thesis: *Strain localisation in dome building eruptions.* Supervisors: Prof. D.B. Dingwell, Prof. C. Trepmann.
Sept. 2009	MSci Geology (2:1), University College London. Dissertation: *Thermal and cyclic stressing of edifice rocks at Mount St. Helens.* Supervisor: Prof. P. Meredith.
June 2005	Geology, Physics, Chemistry & General Studies, (A-levels), Biology (AS-level), Hereford 6th Form.

Employment

Current

Since April 2022 — Ludwig-Maximilians-Universität, München, Germany, **Akademischer Oberratin/ Senior Faculty Academic (**Akademischer Ratin/ Faculty Academic from April 2022 –April 2024)

- Exploring magma-rock-fluid interactions using novel laboratory experimentation.
- Establishing mechanical, rheological, geochemical, and geophysical characteristics of a range of volcanic rocks and magmas.
- Innovating new magma testing apparatus.
- Founding a cutting-edge high temperature *Dynamic Material Testing Laboratory.*

Since April 2025 — Istituto Nazionale di Geofisica e Vulcanologia (INGV), Rome, Italy, **Honorary Associate Researcher**

- Co-investigator for the Earth Telescope Research Programme SAKURA
- Exploring crustal deformation and associated geophysical signals using experimental approaches.

Previous Positions

March 2020 – March 2022 — University of Edinburgh, United Kingdom, **Post-doctoral Research Associate**
EPSRC Prosperity Partnership *Smart Pulses for Subsurface Engineering:*

- Using novel mechanical testing to elucidate the impact of pulsed pumping on hydraulic fracture generation.
- Defining strategies to enhance efficiency of geothermal resource extraction.

November 2021 – February 2022 — University of Liverpool, United Kingdom, **Senior Research Associate**
Working in the *Volcanology and Geothermal Research Laboratory:*

- Examining the mechanisms of externally triggered volcanic unrest.
- Management of high-T, high-P equipment, training of personnel, incl. mentorship and supervision.

December 2019 - March 2020 — University of Canterbury, Christchurch, New Zealand, **Guest Research Associate**
Earthquake-triggered failure as a learning tool with Prof. B. Kennedy:

- Developing strategies for building virtual classrooms in geoscience.
- Interpreting rock and building materials' susceptibility to triggered failure by earthquake instabilities.

January 2017 - February 2020 — University of Liverpool, United Kingdom, **Early Career Fellow of the Leverhulme Trust**
Understanding the frictional behaviour of volcanic rocks and magmas:

- Integrating field and experimental studies to explore frictional behaviour.
- Creating thermo-mechanical models for lava dome instability.
- Developing bespoke equipment to monitor friction at high temperature.

July 2019 - October 2019 — University of Iceland, Reykjavik, Iceland, **Visiting Research Fellow**
Reservoir geomechanics:

- Using field and experimental studies to investigate how fluid flows in fractured geothermal reservoir rocks.

May 2013 - December 2016 — University of Liverpool, Liverpool, United Kingdom, **Post-doctoral Research Associate**
ERC funded project *Strain Localisation in Magmas*:
- Using field and experimental studies to investigate magma flow and fracture, and dynamic permeability evolution.
- Utilising in-situ 4D synchrotron x-ray imaging to illuminate volcanic processes.

April 2010 - April 2013 — Ludwig-Maximilians-Universität, München, Germany, **PhD Candidate & High-T Lab Coordinator**
ERC funded project *Explosive Volcanism in the Earth System* with Prof. D. Dingwell:
- Rheological and petrographic investigations of deformation in magmas.
- Overseeing the experimental programme and user training for the volcanology lab.
- Experimental equipment design and modification.

Summer 2009 — USGS Cascades Volcano Observatory, Washington, USA, **Intern**
- Fieldwork, geophysical instrument deployment, processing of seismic data

Honours and Awards

- Elected **Fellow of the Young Academy of Europe** (2018-2025)
- EUSA Teaching Award nominee (2022)
- **Honorary delegate and council member** of the International Union for Geodesy and Geophysics, IUGG (2019)
- **Outstanding Young Scientist Award** of the European Geosciences Union, Geochemistry-Mineralogy-Petrology-Volcanology (GMPV) division (2016)
- Daiwa Foundation Award (2015)

Leadership and Management Roles

- Creation, commissioning, management and administration of the *Dynamic Material Testing Laboratory* (LMU; 2022-)
- Management and administration of the *Magma Deformation Laboratory* (LMU; 2022-)
- Advisory role - Equality, Diversity and Inclusivity policy of the Volcanic & Magmatic Study Group (VMSG; 2021)
- **UK envoy and representative** for the IUGG council (2019)
- International Association of Volcanology and Chemistry of the Earth's Interior, **IAVCEI representative** at the IUGG General Assembly (2019)
- **Athena Swan** – equality and diversity silver award application committee, U. Liverpool (2018-2019)
- Early career volcanology liaison for the Geological Society of London (2018-2019)
- **Lead organiser of the Joint Assembly** (attendance: 450) of the Tectonics (TSG), Volcanic and Magmatic (VMSG) and Geophysics (BGA) study groups meeting, Liverpool (2017)
- Committee member of the VMSG (2017-2020)
- **Scientific Advisory Committee** member for the Geochemistry, Mineralogy, Petrology & Volcanology, GMPV division of EGU (2017-2019)
- Advisory role for the A-level Geology examination board OCR (2017-2019)
- Early Career Researcher funding committee member, distributing £100k annually (2017-2018)
- **Research Strategy Group** early career representative (2016)
- Department seminar series co-organiser (2015-16)
- Planning, management and reporting of finances for ERC, UKRI (NERC and EPSRC) and Leverhulme funds (2014-)
- Website design and content manager for Volcanology in Liverpool (2014-2020)
- Member of organising committee for British Geophysics Association (BGA) meeting, Liverpool (2014)
- Laboratory facility manager, U. Liverpool (2013-2020)
- Laboratory Safety co-ordinator, U. Liverpool (2013-2017)
- Post-graduate group spokesperson for Mineralogy & Volcanology, LMU-Munich (2010-2013)
- Social Secretary and year-group representative of the Greenough Society (Geology) at UCL (2006-2008)

Societal Activities and Positions of Trust

- Convenor of *Volcanic processes: from classical to innovative approaches* at IAVCEI, Geneva (2025)
- Curator and designer of the exhibit *Krafla Magma Testbed* at the Museum Mineralogia, Munich (2024)
- Co-organiser of the KMT Symposium "Together, toward a greener and safer future" (attendance: 150), Munich (2024)
- Organiser of a workshop on High-Impact Publishing with *Nature Geoscience*, LMU (2023)
- Earth & Environmental Sciences Evaluator and funding panel member, *Fundação para a Ciência e a Tecnologia* (FCT), Scientific Employment Stimulus, Portugal (2021-2025)
- Social media (twitter, X) for LMU Volcanology @LMU_Volc, >4,800 followers (2022-2024)
- Member of the Research Staff Forum, Geological Sciences, U. Edinburgh (2021)
- Convener of *Explosive or Effusive? What Controls Eruptive Style, and How Can We Forecast It*? at AGU, USA (2021)
- Invited member of the *UK Research & Innovation (UKRI)* Early Career Forum (2021-2022)
- Evaluator for various funding agencies, incl. *UKRI*, United Kingdom *and FWF Der Wissenschaftsfonds*, Austria (2020-)
- Communications, social media and outreach for the Young Academy of Europe (2019)
- Public Lecture for the Institute of Physics, Liverpool (2019)

- Distribution of permeability test kits to schools/ colleges & online teaching material development (2018-2019)
- Social media (twitter) for VMSG @vmsg_uk, >5,200 followers (2018-2019)
- Contributing member of LivWiSE [Liverpool Women in Science and Engineering] (2018-2020)
- Session convener at Cities on Volcanoes, Naples, Italy (2018)
- Continuing Professional Development (CPD) course design and delivery for A-level Geology teachers (2017-2019)
- Convener of Lava domes and flows at IAVCEI general assembly, Portland, USA (2017)
- EGU and TSG blog writer (2016-2017)
- Organiser and leader of CV workshops for PhD students, U. Liverpool (2016-2017)
- Exhibitor and exhibit designer of 4D Science, the Royal Society Summer Science Exhibition (2016)
- Exhibitor and exhibit designer of 4D Science, Manchester Science Festival, by the Royal Society (2016)
- Convener of Pores, Cracks, Fluids & Permeability, EGU, Vienna (2015-2019)
- Convener of Rheological and Mechanical Influences on Volcanic Eruptions, IUGG, Prague (2015)
- Session convener at Volcanologists and Igneous Petrologists Meeting, Liverpool (2015)
- Coordinator of Volcanology in Liverpool social media (twitter) @VolcanoLiver, >3,300 followers (2014-2022)
- University of Liverpool school visitor outreach content design and delivery (2014-2019)
- Demonstrator for University of Liverpool discovery days and school visits (2013-2019)

Funding

Significant grants	• Deutsche Forschungsgemeinschaft (DFG) grant ICDP priority programme (Principal Investigator); **Harnessing Energy by Active Thermo-mechanical Engineering of Reservoir Rock [HEATER^2],** LMU-Munich (2025-2028). 296k EUR • Deutsche Forschungsgemeinschaft (DFG) grant (Principal Investigator); **Long-term cooling-induced volcano instability,** LMU-Munich (2025-2028). 338k EUR • Istituto Nazionale di Geofisica e Vulcanologia, Earth Telescope Research Programme (Co-Investigator/ Project Partner); **SAKURA - From Mantle Flow to Magma Migration: A Multiscale Investigation of Lithospheric-Asthenospheric Coupling** (2025-2029). 2M EUR • NERC standard grant (Co-Investigator); **Transient magma permeability and gas flow: a combined experimental and theoretical model,** U. Liverpool, now LMU-Munich (2021-2024). 633k GBP • Royal Society of New Zealand Te Aparangi Marsden project (Co-Investigator); **Shaking magma to trigger volcanic eruptions,** U. Canterbury (2017-2022), 650k NZD • NERC standard grant (co-writer and project partner); **Shedding new light on volcanoes: real time synchrotron x-ray tomography of magmatic phenomena,** U. Manchester and U. Liverpool (2015-2018). 489k GBP • Leverhulme Trust Early Career Fellowship (Principal Investigator); **Understanding the frictional behaviour of volcanic rocks and magmas,** U. Liverpool (2017-2020), 282k GBP • Deutsche Forschungsgemeinschaft (DFG) Grant (Co-Investigator); **2D and 3D fabric quantification of conduit textures to understand eruption dynamics and mechanisms: unique in situ example of Mt Unzen,** LMU-Munich (2016-2021) ~580k EUR • Landsvirkjun PhD studentship sponsor funding (Co-Investigator); **Constraining mechanical and permeability properties of the Krafla geothermal reservoir,** U. Liverpool (2015-2019) ~45k GBP
Small grants & seed funds	• Equipment fund (Principal Investigator) for acoustic monitoring of large-scale testing (2021) £9k • Early Career Researchers Fund (Principal Investigator) for studying magma fragmentation (2019) £5k • Early Career Researchers Fund (Principal Investigator) to test resilience to ballistic impacts, forging connections between volcanology and engineering (2017) £2k • Impact Funds Bursary (Principal Investigator) to develop a low-cost A-level Geology permeability practical including test kits (2017) £800 • Bursary from the Tectonic Study Group for Geological Hazards of California field school (2017) £1k • Landsvirkjun Research Funds bursary (Co-Investigator) for optimising energy extraction from deep geothermal resources (2016-2019) ~£28k • Daiwa Foundation Award (Co-Investigator) for field study of Unzen volcano (2015) £7.5k • Diamond Light Source (Co-Investigator) beam-time EE12581 (2015), equivalent funding ~£24k • Registration Grant for IUGG in Prague, Czech Republic (2015) ~£800 • Registration Grant for IAVCEI in Kagoshima, Japan (2013) ~£1k • Diamond Light Source (Co-Investigator) beam-time SP9220 (2013), equivalent funding ~£29k • Registration Grant for Cities on Volcanoes 7 in Colima, Mexico (2012) ~£500 • Student Travel Grant for Goldschmidt in Montreal, Canada (2012) ~£2k • DAAD Teaching Assistantship “Rock-fluid interaction”, LMU Munich (2012-2013) 3k € • DAAD Teaching Assistantship “Petrophysics”, LMU Munich (2011-2012) 3k €
	• Marie Skłodowska-Curie Global postdoctoral fellowship (co-supervisor) **CARAVAGGIO: Coupled volcanotectonics, numerical modelling, experimental constraints, and volcanic thermal emissions to unravel crustal magma migration**. 380k EUR

Collaborations	• European Research Council, consolidator grant (co-conceptualised) **MODERATE: Magma outgassing during eruptions and geothermal exploration,** U. Liverpool, now LMU-Munich (2022-2027). 2.7M EUR • Engineering and Physical Sciences Research Council (EPSRC) grant (co-writer and PDRA); **Smart Pulses for Subsurface Engineering** Led by U. Strathclyde, (2018-2024). 2.4M GBP • The **GeoX Suite** (project partner) of XCT-synchrotron facilities funded by NERC (2019-). Led by U. Strathclyde, with input from over 20 institutions (2019-2023). 271k GBP • NERC urgency Grant (project partner) **Rapid deployment of a multi-parameter geophysical experiment at Santiaguito volcano, Guatemala,** U. Liverpool (2016-2017). 38k GBP • European Research Council, starting grant (project partner) **Strain Localisation in Magmas,** U. Liverpool (2012-2017). 2.1M GBP

Teaching

- Lecturer for the "*Magmas and their Volcanic Products*" short course, LMU (2025-)
- Field co-leader for "Petro-II" field school in Namibia, bachelor course, LMU (2024-)
- Module co-leader "Petro-II" seminar, bachelor course, LMU (2024-)
- Field co-leader for "Volcanology of Europe" field school in Tenerife and La Palma, Canary Islands, bachelor course, LMU (2024-)
- Module co-leader "Volcanology of Europe" seminar, bachelor course, LMU (2024-)
- Module co-leader "Gelände- und Labormethoden", bachelor course, LMU (2024)
- Module leader, course creator and lecturer for "Applied Rock Mechanics", master course, LMU (2023-)
- Module co-leader, content designer and lecturer for "Polarisation Microscopy", master course, LMU (2023-)
- Field co-leader for "Petrology and Petrography" field school in Südtirol, Italy, bachelor course, LMU (2023-2024)
- Practical demonstrations for the "*Melts, Glasses and Magmas*" short course, LMU (2023-2024)
- Lecturer and content designer for "Petrophysics", master course, LMU (2022-)
- Lecturer for "Optical microscopy", bachelor course, LMU (2022-2023)
- Teaching assistant for "Applied Environmental Hydrogeology" master course, U. Edinburgh (2021) **nominated for an EUSA Teaching Award*
- Invited field leader and lecturer for "Frontiers Abroad" masters-level residential field school "Geology of New Zealand" with U. Canterbury (2020; 2023)
- Online learning materials development for "GeoHub" (2019)
- Distribution of permeability test kits to 12 A-level Geology schools and colleges (2019)
- Demonstrator for igneous petrology and microscopy, 3rd Yr. undergraduate level, U. Liverpool (2019)
- Lecturer and content co-designer, Continuing Professional Development course for A-level Geology teachers, University of Liverpool, accredited by the Geological Society of London (2017-2019)
- Field leader for 2-week residential field school "Introductory methods", Pembrokeshire, U. Liverpool (2017-2018)
- Leader for post-graduate, academic field trip "Geology of Long Valley Caldera", California, USA (2017)
- Post-graduate field school "Natural Hazards", California, USA, in conjunction with the Tectonics Study Group (2017)
- Module co-leader, course writer and lecturer for "Introduction to Volcanology" for the general public, Continuing Education, Liverpool (2016) **commended for being rated 10/10 by all participants*
- Short course "Thermal imaging methods", for students and professionals, Workshops on Volcanoes, Quetzaltenango, Guatemala (2015)
- Developed and delivered annual course "Peer review training" for PhD students, U. Liverpool (2015-2019)
- Field-guide for 3rd Yr. Structural mapping in Nisyros Caldera, Greece for U. Liverpool (2014)
- Demonstrator for "Introduction to Geology for Civil Engineers", School of Engineering, U. Liverpool (2013-2017)
- Demonstrator for U. Liverpool Earth and Environmental Science open days for course applicants (2013-2016)
- Teaching Assistant and lecturer (DAAD funded) for the Master level class "Rock-fluid interaction", LMU (2012-2013)
- Design and delivery of short course "Multiphase magma rheology and experimentation in volcanology" LMU (2012)
- Teaching Assistant and lecturer (DAAD funded) for the Master level class "Petrophysics", LMU (2011-2012)

Supervision

Current	I. Haarer	**PhD** (LMU) 2025-2028: *Thermo-mechanical stimulation of geothermal reservoirs*
	M. Colombier	**PDRA** (LMU) 2025-2026: *Lava dome instability*
	E. Zorn	**Emmy Noether Junior Research Fellow** (LMU) 2025-2031: *Volcaniclastic compaction*
	A. Bain	**PDRA** (LMU) 2025-2026: *Multiphase magma rheology during disequilibrium conditions*
	K. Drymoni	**Marie Skłodowska-Curie Global postdoctoral fellow** (LMU) 2024-2027: *Volcanotectonics of magma transport in the crust*
	K. Heinrigs	**PhD** (LMU) 2024-2027: *Magma vesiculation in dynamic conditions*
	H. James	**PhD** (LMU) 2024-2027: *Transient rheology of magmas during fracture-healing*
	J. Schunke	**PhD** (LMU) 2023-2026: *Controlling permeability evolution in fragmental systems*
	J. Birnbaum	**PDRA** (LMU) 2023-2026: *Multiphase magma rheology under disequilibrium conditions*

Former	E. Zorn	**PDRA** (LMU) 2022-2024: *Volcanic flank instability during magmatic activity*
	K. Drymoni	**PDRA** (LMU) 2023-2024: *Thermal fracture modelling during magmatic activity for geothermal resource extraction*
	M. da Silva	**PDRA** (LMU) 2022-2024: *Deciphering in-situ magma chamber conditions*
	A. Lamur	**PDRA** (UoL/ LMU) 2017-2023: *Transient magma permeability*
	J. Weaver	**PhD** 2017-2022 (UoL): *Porosity and permeability in evolving fragmental volcanic systems*
	A. Martin	**MSc** (UoE) 2020-2021: *Cement integrity to hydrogen storage*
	J. Schauroth	**RA** 2017-2021 (UoL): *Foaming magma in differential stress and temperature fields*
	A. Hughes	**PhD** 2016-2021 (UoL): *Frictional behaviour of volcanic debris avalanches following catastrophic flank collapses*
	E. Hartung	**PDRA** (UoL) 2018-2020: *Mineralogical fingerprints of strain localisation*
	T. Yilmaz	**PDRA** (LMU Munich) 2016-2020: *2D and 3D fabric quantification of conduit textures to understand eruption dynamics*
	T. Lea	**MSci** 2018-2019 (UoL): *Controlling gas flow and foaming fragmental magma*
	A. Colgate	**MSc** 2017-2019 (Portsmouth): *Remote monitoring of flank instability at Mt. Etna*
	A. Bain	**PhD** 2014-2018 **(**Edinburgh, informal**)**: *Eruption dynamics of cyclic vulcanian explosions from Galeras volcano, Colombia*
	M. Churka	**Intern** 2017 (UoL): *A low-cost, bench-top permeability method for teaching A-level Geology*
	D. Alsmairi	**MSci** 2016-2017 (UoL): *High-velocity impact of volcanic ballistic clasts*
	G. Eggertsson	**PhD** 2015-2019 (UoL): *Constraining mechanical and permeability properties of the Krafla geothermal reservoir, North-East Iceland*
	P. Wallace	**PhD** 2015-2019 (UoL): *Dynamic rheology of ascending magma during lava dome eruptions: Effusive–explosive activity*
	R. Coats	**PhD** 2015-2019 (UoL): *The rheology of pore and crystal bearing magmas*
	C. Harnett	**PhD** 2015-2019 **(**Leeds University, informal**)**: *Mechanics of discontinuities under elevated temperatures and pressures*
	R. Wall	**PDRA** 2015-2016 (UoL): *Lava rupture in extensional regimes*
	A. Rogers	**MSci** 2015-2016 (UoL): *Thermo-mechanics of material failure*
	R. Kendrick	**Intern** 2015 (UoL): *Geomagnetism in lavas with varying degrees of shear*
	A. Lamur	**PhD** 2014-2017 (UoL): *Development, impact and longevity of fractures in magmatic, volcanic and geothermal systems*
	O. Lamb	**PhD** 2014-2017 (UoL, informal): *A seismic, acoustic and experimental study of lava dome eruptions*
	F. Iddon	**Intern** 2014-2015 (UoL): *Thermal stressing and columnar jointing*
	W. Rozanski	**MSci** 2014-2015 (UoL): *Assessment of structural stability of Mt. Etna, Italy*
	A. Hornby	**PhD** 2013-2016 (UoL): *Fracture, friction and fragmentation: Brittle processes in lava domes*

Examination

2025 M. Langer, **PhD,** *Degrowth im Tourismus: Akteure transformativer Pfade in eine wachstumsunabhängige Zukunft des Tourismus,* Ludwig-Maximilians-Universität, München, Germany
2024 A.Theurel, **PhD,** *The role of crystals in viscous magma outgassing,* Université Savoie Mont Blanc, ISTerre, France
2022 Y. Feisel, **PhD** (3rd Gutachter), *Halogen diffusion in silicate melts,* Johannes Gutenberg-Universität Mainz, Germany

Solicited Presentations

- Departmental Seminar, The Geophysical Institute of the University of Alaska Fairbanks, USA (2024).
- Invited speaker, Geo-Energy Symposium, University of Strathclyde, UK (2024).
- Invited presentation, KMT Symposium, Munich, Germany (2024).
- Invited Keynote presentation, 8th IAVCEI Collapse Caldera Workshop, Bolzano, Italy (2023).
- Inaugural Seminar, Ludwig-Maximilians-Universität, München, Germany (2022)
- Invited speaker at American Geophysical Union (AGU), New Orleans/ virtual, USA (2021)
- Invited speaker, TeMas Workshop, Mainz (2021)
- Keynote presentation at VMSG (virtual), UK (2021)
- Volcanology Group Seminar, University of Canterbury, New Zealand (2020)
- Institute of Physics public lecture, Liverpool, UK (2019)
- Geosciences EPS seminar, University of Edinburgh, UK (2019)
- Geophysics group seminar, Karlsruhe Institute of Technology, Germany (2019)
- Department Seminar, University of Iceland, Iceland (2019)
- Bullard Lecture, University of Cambridge, UK (2019)
- Workshop on Rock Friction, University of Liverpool, UK (2019)
- Manchester-Liverpool volcanology showcase, University of Manchester (2019)
- School of Environmental Sciences research showcase speaker, University of Liverpool, UK (2019)
- Invited speaker at American Geophysical Union (AGU), Washington DC, USA (2018)

- Invited speaker at Cities on Volcanoes (CoV), Naples, Italy (2018)
- School Forum speaker, Ludwig-Maximilians-Universität, München, Germany (2018)
- Department Seminar, University of Canterbury, New Zealand (2018)
- Department Seminar, University of Portsmouth, UK (2017)
- PGR conference keynote speaker, University of Portsmouth, UK (2017)
- Outstanding Young Scientist Award Keynote – GMPV Division, at the European Geoscience Union (EGU), Vienna, Austria (2016)
- Department Seminar, University of East Anglia, UK (2016)
- Invited speaker at European Geoscience Union (EGU), Vienna, Austria (2015)
- Research in-progress seminar, University of Liverpool, UK (2015)
- Department Seminar, University of Liverpool, UK (2014)
- Invited speaker at European Geoscience Union (EGU), Vienna, Austria (2013)
- Department Seminar, University of Liverpool, UK (2013)
- Department Seminar, Universidad de Colima, Mexico (2012)
- Department Seminar, Ludwig-Maximilians-Universität, München, Germany (2012)

Editorial and Review Activities

- Assistant Editor for Journal of Volcanology and Geothermal Research (2018-)
- Review Editor - Frontiers for Young Minds (2017-)
- Review Editor - Frontiers in Earth Science - Volcanology (2015-)
- Reviewer for various journals, incl. Nature, Nature Geoscience, Earth and Planetary Science Letters, Geology, Journal of Geophysical Research, Geophysical Research Letters, Scientific Reports, Bulletin of Volcanology, Journal of Volcanology and Geothermal Research etc. (2012-)

Professional Memberships

Since - **2023:** IAVCEI commission on Collapse Calderas
2018: Young Academy of Europe; Euroscience
2017: Geological Society of London
2014: VMSG; TSG
2012: Geochemical Society; IAVCEI
2009: AGU; EGU; GSA

Technical Expertise

- High velocity impact testing, plus conceptualisation and design of high-T modification of apparatus (Instron)
- Design and commissioning of a bespoke impact testing apparatus (GUKO)
- Oscillatory stress material testing, plus design of high-T modification of apparatus (Instron)
- True triaxial and polyaxial rock deformation testing (GREAT cell)
- Design and use of apparatus for hydraulic fracture testing using monotonic and pulsed pressure rig
- High-velocity rotary shear experiments to study frictional properties of rocks/ magmas (Marui)
- High-T triaxial and in-situ permeability tests using MAGDA, a 200MPa triaxial press (Sanchez)
- In-situ tomographic imaging of high-T magma deformation at Diamond Light Source synchrotron using:
    - A custom-built uniaxial rig
    - Modified concentric cylinder apparatus
- Modification and optimisation of low to high temperature apparatus (Instron, Marui, STS, various)
- Rheological studies using a high temperature uniaxial presses (Instron, Voggenreiter, various)
- Strength and creep tests using room-temperature, uniaxial presses (Instron, Voggenreiter, Dartec, various)
- Active and passive monitoring of experiments using acoustic emissions (ASC, Mistras, Physical Acoustic Corp.)
- Large-scale magma flow experiments using a bespoke conduit-geometry furnace
- Thermal-quench experiments for geothermal energy
- Magma viscosity investigations using concentric cylinder (Brucker)
- Gas and water permeability measurements (Sanchez and Vinci permeameters)
- Thermal stressing experiments and handling melt (various high-temperature furnaces)
- Ballistic impact testing using a 100 bar pressure-drop gas gun
- Fragmentation threshold studies using rapid decompression apparatus
- Quantitative element mapping using a FEI QEMSCAN SEM
- Electron back-scatter diffraction (EBSD) using both CamScan and Philips SEMs
- FLIR infra-red imaging of experiments and explosive volcanic eruptions
- Micropenetration viscosity measurements using a push-rod Bähr 802 V dilatometer
- Use of TinyPerm portable permeameter for in-situ measurements
- Rock magnetic measurements using VFTB and Kappabridge
- Differential scanning calorimetry on a NETZSCH DSC 404 F1 Pegasus

- Quantitative Electron-probe Microanalysis (EPMA; various apparatus)
- WDA on, amongst others, a CAMECA SX100 scanning electron microprobe (SEM)
- XRF using a Philips Magix-Pro X-ray fluorescence spectrometer
- Powder XRD using a Philips X'Pert Pro Multipurpose X-ray Diffractometer
- Investigations into mass movement dynamics at the experimental debris-flow flume (Deschutes)
- Experience with sample preparation for above procedures

Field Experience

- Reconnaissance and mapping of lava flows at the Reykjanes peninsula, Iceland
- Petrological examination and sample selection in Namibia
- Structural mapping of Ora Caldera collapse, Bolzano, Italy
- Mapping of lava dome structures of the Inyo Lava Domes, California
- Petrological investigation of a convergent margin, Südtirol, Italy (teaching, field school)
- Geology and hazards of the central volcanic zone, New Zealand (teaching, field school)
- Reconnaissance and mapping of lava flows at Landmannalaugar, Iceland
- Examination/ sampling of cores from geothermal reservoirs with Landsvirkjun and Reykjanesvirjun, Iceland
- Mapping and shear zone sampling at Markagunt and Sevier gravity slides, Utah, USA
- Exploring strain localisation across scales in Long Valley Caldera, USA
- Mapping and logging of landslide deposits at Pichu-Pichu volcano, Peru
- Geological and Environmental hazards of California, USA (teaching, TSG Field school)
- Geological history of Pembrokeshire, UK (teaching, field school)
- Thermal, optical, seismic and acoustic monitoring of Santiaguito volcano, Guatemala
- Lava dome, ash and ballistic examination and sampling at Santiaguito volcano, Guatemala
- Mapping and sample collection to study flank instability at Etna, Italy
- Sample collection and mapping of the Holuhraun/ Bárðarbunga fissure eruption, Iceland
- Structural mapping, thermal monitoring and in-situ permeability at Nisyros Caldera, Greece
- Thermal, seismic and acoustic monitoring at Pacaya volcano, Guatemala
- Structural mapping, in-situ permeability and sample collection at Pacaya volcano, Guatemala
- Structural investigations, magnetic surveys and in-situ permeability at Mount Unzen, Japan
- Ash collection at Sakurajima volcano, Japan
- Structural mapping at Glencoe, Scotland
- Field mapping and sampling of dykes at Krafla volcano, Iceland
- Mapping of columnar jointing morphologies in basalt and sample collection in Iceland
- Structural mapping of the dome and sample collection at Volcán de Colima, Mexico
- Structural mapping and sample collection at Ceborucco volcano, Mexico
- Reconnaissance 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, USA in collaboration with the USGS, University College London and the University of British Colombia
- Lava flow mapping and sample collection at Newberry Caldera, USA (with USGS and USFS)
- Logging of tephra deposits at Mount St. Helens, USA (with USGS and PIRE)
- Assistance with the deployment of spiders (portable telemetered stations) at Mount St. Helens, USA for the OASIS (Optimized Autonomous Space In-situ Sensor-web) project with USGS and NASA
- Setting up GPS and seismic base stations at Crater Lake, USA (with CVO)
- Mapping volcanic deposits cut by the Toutle River, Washington, USA (with CVO)
- GPR and magnetic surveys in the Abruzzo Mountains, Central Italy
- Additional field experience - Campi Flegrei, Etna, Lipari and Vesuvius, Italy; Almeria and Pyrenees, Spain; Ries Crater, Germany; Lake District, Snowdonia, Devon, Cornwall, Isle of Wight and Isle of Arran, UK.

Selected Media Coverage

2023	*Experimental Volcanology* documentary for DW (Deutsche Welle)
2020	*The Giant's Causeway* episode for *Impossible Planet*, Blizzard Road Productions
2019	*International Day of Women and Girls in Science* interview for the Bournemouth Echo
2019	*Volcanic ash particles under the microscope* on European Commission News; after Hornby et al., *Nat. Sci. Rep.* 2019: also generated 13 related news articles; >3.7k social media interactions; potential audience >29M
2018	*Hot, warm or cold? New insight into how Giant's Causeway formed*; after Lamur et al., *Nat. Comms.* 2018: generated 71 related articles (incl. Guardian); >14k social media interactions; potential audience = 207 Million
2015	*'Frictional heat' as a new trigger for explosive volcanic eruptions;* after Lavallée et al., *Nature* 2015: generated 19 related articles; >8k social media interactions; potential audience >29 Million

2014 *Volcanic drumbeat seismicity*; after Kendrick et al., *Nat. Geosci.* 2014: generated 33 related articles; >1.5k social media interactions; potential audience >35 Million

2009 *Mt. Saint Helens: Back from the Dead*, 30th anniversary documentary, NOVA

Conferences, Symposia, Workshops & Advanced Training

2025 IAVCEI (Geneva, Switzerland), Laccoliths, sills and dykes (LASI) VII (Hveragerdi, Iceland), Flanked ICDP Etna drilling project meeting (Catania, Italy)

2024 Physics on Volcanoes (Oberpfaffenhofen, Germany), Bridging Cultures: Leading and Collaborating in Intercultural Teams (Munich, Germany), KMT Symposium (Munich, Germany), EGU (Vienna, Austria), AGU (Washington DC, USA)

2023 IAVCEI (Auckland, New Zealand); EGU (Vienna, Austria), IUGG (Berlin, Germany), 8th IAVCEI Collapse Caldera Workshop (Bolzano, Italy), 1st Sino-German Workshop (Munich, Germany), Leading with Excellence: Leading in Research (Munich, Germany)

2022 DMG joint sections meeting Geochemistry/Petrology (Mainz, Germany)

2021 VMSG (virtual, UK); TSG (virtual, UK); EGU (virtual, Austria); Young Academy of Europe Annual meeting (virtual, Spain); AGU (virtual, USA)

2020 COUFRAC (virtual, South Korea); EGU (virtual, Austria); 8th European Geothermal Workshop (virtual, Europe); AGU (virtual, USA)

2019 VMSG (St. Andrews, UK); EGU (Vienna, Austria); Building Bridges joint assembly of Academia Europaea and the Young Academy of Europe (Barcelona, Spain); Paywall: The business of scholarship (Liverpool, UK); IUGG (Montreal, Canada); Workshop on Rock Friction (Liverpool, UK); European Academies meeting (Helsinki, Finland)

2018 VMSG (Leeds, UK); EGU (Vienna, Austria); Building Bridges joint assembly of the Academia Europaea and the Young Academy of Europe (Barcelona, Spain); Cities on Volcanoes (Naples, Italy); AGU (Washington DC, USA)

2017 Joint Assembly of TSG-VMSG-BGA (Liverpool, UK); EGU (Vienna, Austria); Joint meeting of Academia Europaea, All European Academies and the Young Academy of Europe (Budapest, Hungary); Fault zone processes (Manchester, UK); IAVCEI (Portland, USA); AGU (New Orleans, USA)

2016 EGU (Vienna, Austria); Workshops on Volcanoes (Quetzaltenango, Guatemala)

2015 VMSG (Norwich, UK); EGU (Vienna, Austria); IUGG (Prague, Czech Republic); 11th Euroconference on Rock Physics and Geomechanics (Ambleside, UK); AGU Joint Assembly (Montreal, Canada); Volcanologists and Igneous Petrologists (Liverpool, UK)

2014 Advances in Earthquake Source Physics (London, UK); MEMOVolc (Pisa, Italy); 10th Euroconference on Rock Physics and Geomechanics (Aussois, France); British Geophysical Association (Liverpool, UK); AGU (San Francisco, USA)

2013 VMSG (Bristol, UK); EGU (Vienna, Austria); The Signals of Magma Motion Symposium (Organised, Liverpool, UK); IAVCEI (Kagoshima, Japan); UCL Johnston-Lavis workshop (London, UK); AGU (San Francisco, USA)

2012 EGU (Vienna, Austria); Goldschmidt (Montreal, Canada); Melts, Glasses and Magmas (Munich, Germany); Cities on Volcanoes 7 (Colima, Mexico); AGU (San Francisco, USA)

2011 EGU (Vienna, Austria); 9th Euroconference on Rock Physics and Geomechanics (Trondheim, Norway); Fragile Earth (Munich, Germany); IUGG (Melbourne, Australia); AGU (San Francisco, USA)

2010 EGU (Vienna, Austria); Melts, Magmas and Glasses (Munich, Germany); Physico-chemical processes in seismic faults (Padova, Italy); AGU (San Francisco, USA)

2009 GSA (Portland, USA); AGU (San Francisco, USA)

Publications

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6. **Kendrick, J.E.,** Lavallée, Y., Hess, K-U., De Angelis, S., Ferk, A., Gaunt, H.E., Meredith, P., Dingwell, D.B., and Leonhardt, R., 2014, Seismogenic frictional melting in the magmatic column, *Solid Earth*, vol. 5, 199-208. http://dx.doi.org/10.5194/se-5-199-2014
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8. Ashwell, P.A.* and **Kendrick, J.E.***, Lavallée, Y., Kennedy, B.M., Hess, K-U., von Aulock, F., Wadsworth, F.B., Vasseur, J. and Dingwell, D.B., 2015, Permeability of compacting porous lavas. *Journal of Geophysical Research*, vol. 120, Issue 3, 1605–1622. http://dx.doi.org/10.1002/2014JB011519 *both authors contributed equally
9. Calder E., Lavallée Y., **Kendrick, J.E.,** Bernstein M., 2015, Lava dome eruptions. In: *Encyclopedia of Volcanoes, 2nd Edition*, Houghton B., Rymer H., Stix J., McNutt S. (eds.), *Elsevier, Academic Press*, Solicited, https://doi.org/10.1016/B978-0-12-385938-9.00018-3
10. # Hornby, A.J., **Kendrick, J.E.,** Lamb, O., Hirose, T., De Angelis, S., von Aulock, F.W., Umakoshi, K., Miwa, T., Henton De Angelis, S., Wadsworth, F.B., Hess, K-U., Dingwell, D.B. and Lavallée, Y., 2015, Spine growth and seismogenic faulting at Mt Unzen, Japan, *Journal of Geophysical Research,* vol. 120, issue 6, https://doi.org/10.1002/2014JB011660
11. Schaefer, L.N., **Kendrick, J.E.,** Oommen, T., Lavallée, Y. and Chigna, G., 2015, Geomechanical rock properties of a basaltic volcano, *Frontiers in Earth Science - Volcanology*, vol. 3, article 29, http://dx.doi.org/10.3389/feart.2015.00029
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# denotes works led by a PhD candidate under my supervision