

## CURRICULUM VITAE

1. Marie Edmonds, Professor of Volcanology and Petrology
2. Earth Sciences Department, University of Cambridge
3. Cambridge, Cambridgeshire, United Kingdom

### 4. HISTORY OF EMPLOYMENT

---

- 2007 – Professor, Earth Sciences Department, University of Cambridge, UK  
2007 – Ron Oxburgh Fellow in Earth Sciences, Queens' College  
2006 – 2007 Reader, School of Environmental Sciences, University of East Anglia, UK  
2004 – 2006 Mendenhall Fellow, United States Geological Survey, USA  
2002 – 2004 Volcanologist, British Geological Survey, UK

### 5. DEGREES

---

- 2002 PhD, Volcanology, Earth Sciences Department, University of Cambridge, UK  
Advisors: Prof David Pyle, Prof Clive Oppenheimer  
Thesis: *Sulfur and chlorine degassing at the Soufriere Hills Volcano, Montserrat*  
1997 Bachelor of Arts Hons, Geological Sciences, University of Cambridge, 1<sup>st</sup> class

### 6. NARRATIVE OF RESEARCH EXPERIENCE

---

Marie Edmonds holds a Chair in Volcanology and Petrology at the Earth Sciences Department, University of Cambridge and is the Ron Oxburgh Fellow in Earth Sciences at Queens' College, Cambridge. Her research focuses on understanding the reservoirs and fluxes of volatile elements in Earth, which are of fundamental importance for the habitability of our planet, for green energy and for the sustainable management of resources. Edmonds's research, which spans the disciplinary boundaries, reaches from deciphering the nature of the interior of the Earth, to magma transport and storage in the crust, to volcano monitoring, ore deposits and the dynamic chemistry of volcanic gases in the atmosphere and climate. Edmonds has sustained a high level of high-impact scientific research through her career in the areas of volcano monitoring, planetary volatile cycling, and magma storage and transport in the crust, including the formation of hydrothermal ore deposits. Over the past 20 years Edmonds has advised 15 PhD students and >25 masters students and has published 125 papers with an H-index of 45 (GS), 20 yrs post-phd.

### 7. KEY PUBLICATIONS

---

- 2022, Edmonds, Marie, Mason, Emily, and Hogg, Olivia. Volcanic outgassing of volatile trace metals. *Annual Review of Earth and Planetary Sciences*, 50:79–98, 2022
2022. Edmonds, Marie, E. Liu, and K. Cashman. Open-vent volcanoes fuelled by depth-integrated magma degassing. *Bulletin of Volcanology*, 84(3):1–27, 2022
2020. Wieser, P. F. Jenner, M. Edmonds, John Maclennan, B. E. Kunz, Tracking chalcophile elements from source to vent at Kilauea Volcano, Hawaii. *GCA* 282:245-75.
- 2021, Mason, Emily, M Edmonds, et al. Volatile metal emissions from volcanic degassing and lava–seawater interactions at Kilauea volcano, Hawai'i. *Comms Earth & Env*, 2(1):1–16.
2020. Wieser, P. E., M. Edmonds, J. Maclennan, J. Wheeler. Distorted olivine crystals: an unexploited record of magma storage at Kilauea Volcano, Hawaii. *Nat Comms* 11(1):1-4.

2019. Wieser, P. E., M. Edmonds, J. Maclennan, F. Jenner and B. Kunz. Crystal scavenging from mush piles recorded by melt inclusions. *Nat Comms* 10(1):1-1.
- 2019 Wieser, P. E., Edmonds M et al. To sink, swim, twin, or nucleate: A critical appraisal of crystal aggregation processes. *Geology*. 2019 Oct 1;47(10):948-52.
2019. Mutch, E., J. Maclennan, M. Edmonds. Rapid trans-crustal magma movement under Icelandic volcanoes. *Nature Geoscience* 12, 569–574.
- 2018, Edmonds, M., E. Liu, T. Mather. A distinct metal fingerprint in arc volcanic emissions. *Nature Geoscience* 11, 10, 790-794.
- 2018, Edmonds, M., A.W. Woods. Exsolved volatiles in magma reservoirs. *Journal of Volcanology and Geothermal Research (Invited Review Article)*, v. 368, p. 13-30.
- 2017, Mason, E., M. Edmonds, A.V.T Turchyn. Remobilization of crustal carbon may dominate volcanic arc emissions. *Science* 357, 6348, 290-294.
- 2016, McCormick, M., M. Edmonds, J. Biggs. Observing eruptions of gas-rich compressible magmas from space. *Nature communications* 7, 13744.
- 2016, Edmonds, M., M. Humphreys, E. H. Hauri and S. Kohn. Extensive, water-rich magma reservoir beneath southern Montserrat. *Invited Research Article, Lithos* 252, 216-33.
- 2015, Edmonds, M.. Flotation of magmatic minerals. *Geology* 43, 7, 655-656.
- 2014, Hartley, M., J. Maclennan, M. Edmonds, T. Thordarson, 2014. Reconstructing the deep CO<sub>2</sub> degassing behaviour of large basaltic fissure eruptions. *EPSL* 393, 120-131.
- 2014, Sides, I., M. Edmonds, J. Maclennan, B. Houghton, D. Swanson. Eruption style at Kīlauea Volcano in Hawai`i linked to primary melt composition. *Nat Geosci*, 7, 6, 464.
- 2012, McCormick, B. T., M. Edmonds, T. A. Mather, and S. A. Carn. First synoptic analysis of volcanic degassing in Papua New Guinea. *G-Cubed*, doi:10.1029/2011GC003945.
- 2010, Edmonds, M., A. Aiuppa, M. Humphreys, R. Moretti, G. Giudice, R. S. Martin, R. A. Herd, and T. Christopher. Excess volatiles supplied by mingling of mafic magma at an andesite arc volcano. *Geochem. Geophys. Geosyst.*, doi:10.1029/2009GC002781.
- 2007, Edmonds, M. and T. M. Gerlach. Vapor segregation and loss in basaltic melts. *Geology* 35, 8, 751-754.
- 2003, Edmonds, M., C. M. Oppenheimer, D. M. Pyle, R. A. Herd and G. Thompson. SO<sub>2</sub> emissions from Soufrière Hills Volcano and their relationship to conduit permeability, hydrothermal interaction and degassing regime. *JVGR*, 124, 1-2, 23-43.

## 8. HONORS

---

2022	Geochemistry Fellow, <i>Geochemical Society, European Ass. of Geochemistry</i>
2021	Member of the Academia Europaea, <i>Academia Europaea</i>
2021	Biggsby Medal, <i>Geological Society of London</i>
2020	Fellow of the <i>American Geophysical Union (with Joanne Simpson Medal)</i>
2020	Joanne Simpson Medal, <i>American Geophysical Union</i>
2019	Reginald Daly Lecture, <i>VGP Section of the American Geophysical Union</i>
2019	Thermo Fisher Scientific Annual Award <i>Volcanic &amp; Magmatic Studies Group</i>
2017	Wager Medal, <i>International Ass. Volcanology &amp; Chemistry of Earth's Interior</i>
2013	William Smith Fund, <i>Geological Society of London</i>

## 9. MEMBERSHIP PROFESSIONAL SOCIETIES

---

American Geophysical Union, Geochemical Society, Geological Society of London, International Association of Volcanology and the Chemistry of Earth's Interior (life member)