MATTIA PISTONE – CURRICULUM VITAE (20/06/2023)

Present contact

5th January 1984 (Chieti, Italy)
Italian citizen / EU citizen / US Green Card

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https://mpistonesite.wordpress.com

Citation metrics:
Google Scholar: 1021 citations, h-index: 17, i10-index: 19
Mendeley (ID: 54780522600): 836 citations, h-index: 15
Web of Science ResearcherID (ID: Q-6142-2018): 739 citations, h-index: 14
Researcher ORCID: https://orcid.org/0000-0001-7560-3146

Assistant Professor of Petrology and Volcanology, Director of MAGMA MIA Laboratory, Advisor of five Master students and two bachelor students at the University of Georgia (USA). PI (out of six) of the ICDP-sponsored DIVE (Drilling the Ivrea-Verbano zonE) project. Laboratory and field geologist, petrologist, volcanologist, and magma physicist with a strong track record in international collaborative partnerships in Europe and North America. Enthusiastic communicator, team player, and project manager. Skilful in high-pressure and high-temperature experimentation and tomographic microscopy to explore magma degassing, transport, unrest, and eruption.

Language proficiency

Italian (native), English (proficient), French (advanced), German (intermediate).

Education

November 2012: **Doctoral Degree in Earth Science**, ETH-Zurich, Switzerland, on *Physical properties of crystal- and bubble-bearing magmas* (Advisors: Prof. Peter Ulmer, Prof. Luca Caricchi, Dr. Luigi Burlini)

July 2008: **Master Degree in Geodynamics, Geophysics, Volcanology (110/110 cum laude)**, Università La Sapienza, Rome, Italy, on *Petrological and physical properties of the Avellino Eruption magma chamber of Somma-Vesuvius* (in Italian) (Advisors: Prof. Raffaello Trigila, Dr. Luca Caricchi, Dr. Luigi Burlini)

October 2006: **Bachelor Degree in Geological Sciences (110/110 cum laude)**, Università G. D'Annunzio, Chieti, Italy, on *Investigation on dynamic crystallization of an andesite from Panarea Island, Aeolian Islands, Italy* (in Italian) (Advisors: Dr. Gianluca Iezzi, Dr. Silvio Mollo, Dr. Tonino Traini)

Professional experience

Since August 2019: **Assistant Professor**, University of Georgia, GA, US, in *Petrology and Volcanology*

January 2017-July 2019: **SNSF-Ambizione Maître Assistant (Lecturer)**, University of Lausanne, Switzerland, on *Petrophysics of the Melt Connectivity Transition: Petrological, Rheological, and Seismic Characterisation of the Continental Moho* (PI: Dr. Mattia Pistone)

November 2014-November 2016: **NSF-GeoPRISMS Research Fellow**, National Museum of Natural History, Smithsonian Institution, Washington DC, US, on *The role of oxygen fugacity in calc-alkaline differentiation and the creation of continental crust at the Aleutian arc* (PIs: Dr. Elizabeth Cottrell and Prof. Katherine A. Kelley)

July-August 2014: **NERC Research Fellow**, Camborne School of Mines, Exeter University, and University of Bristol, United Kindgom, on *Critical metals in nature: crystal-melt partitioning of indium at high temperature and pressure conditions* (PIs: Prof. Jonathan D. Blundy and Dr. Jens Andersen)

June 2014: **Advanced Career SNSF Research Fellow**, University of Bristol, United Kingdom, and University of Missouri-Columbia, US, on *The influence of volatiles on the interaction of mafic and felsic magmas* (PI: Dr. Mattia Pistone; renounced for the NSF-GeoPRISMS Fellowship)

January-June 2014: **ERC Research Fellow**, University of Bristol, United Kingdom, on *The influence of volatiles on the interaction of mafic and felsic magmas* (PI: Prof. Jonathan D. Blundy)

January-December 2013: **Early Career SNSF Research Fellow**, University of Bristol, United Kingdom, on *The influence of volatiles on the interaction of mafic and felsic magmas* (PI: Dr. Mattia Pistone)

October-November 2012: **SAPHYR Postdoc**, ETH-Zurich, Switzerland, on *Seismic anisotropy of the Finero Peridotite (Ivrea Zone, Italy)* (PIs: Prof. Eduard Kissling, Dr. Alba S. Zappone)

Teaching and mentoring

Assistant Professor:

2020-pres. *Undergraduate level:*

GEOL 1121 Earth Processes and Environment

GEOL 4020 Internal Earth Processes

GEOL 4020L Internal Earth Processes (Petrography Laboratory)

GEOL 4470 Introduction to Research in Petrology

GEOL 4940L Volcanology

FYOS 1001 Magma Mia! Understanding Active Volcanoes using Modern Petrology

FYOS 1001 Journey in the Earth's interior: origin, architecture, and dynamics of continents

FYOS 1001 Global Citizenship Seminar

Writing Intensive Program (WIP): https://wip.uga.edu/fall-2021-newsletter/

2020-pres. *Graduate level:*

GEOL 6470 Introduction to Research in Petrology

GEOL 6940L Volcanology

GEOL 8070 Advanced Topics in Petrology

GEOL 8790 Research Project in Petrology

GradFIRST Seminar 7001 Studies of Hazards (SHAZARDS) in Geology

GRSC 8550 Responsible Conduct in Research and Scholarship

Lecturer:

2018 *Undergraduate level:*

Practical Training in Magmatic Petrology (*Travaux Pratique de Petrologie Magmatique*)

Italian National Scientific Habilitation:

2018 Eligible for Associate Professorship in Geochemistry, Mineralogy, Petrology, Volcanology, and Georesources: https://asn16.cineca.it/pubblico/miur/esito-abilitato/04%252FA1/2/4

Lecture Assistant in courses for undergraduate level:

2008-12 Optical Microscopy of Metamorphic and Igneous Rocks

2009-12 Volcanology

Field Instructor in courses for undergraduate level:

2017-21 Petrology and Volcanology

2013-14 Geology I

2008-12 Volcanology

Advisor of students:

Graduate students:

2022-pres. Jackson Oakey (*Flow or blow? Understanding magma flow in conduits during vesiculation*) [University of Georgia, US]

2022-pres. Kaitlyn Hulsey (*Building up magma reservoirs in the Earth's crust: the case of Stone, Panola, and Arabia Mountains*) [University of Georgia, US]

2022-pres. Carlynn Daniel (*How are paroxysms generated at mafic volcanoes?: Insights into Mt Etna 2020-2022 eruption activity*) [University of Georgia, US]

2021-pres. Andrew Maendel (*Magma differentiation in the Earth's lower crust: Insights into the analysis of an olivine gabbro of the Ivrea-Verbano Zone, Alps, Italy*) [University of Georgia, US]

2020-pres. Sean Price (*Deciphering evidences of melt percolation in ultramafic rocks of oceanic and continental crust: a geochemical comparison*) [University of Georgia, US]

2020-22 Samuel Oxhorn (*Western Aleutian Volcanism: Defining Magmatic Series Transitions and Petrogenetic Origins*) [University of Georgia, US]

Undergraduate students:

2023-pres. Ruby Jiahui Parcells (*Petrological, geochemical, and geochronological analysis of tephra from Plinian eruption of Chimborazo volcano*) [University of Georgia, US]

2022-pres. Jeremiah Funke (*Magmatic sulphide systems in the deep crust of the Ivrea-Verbano Zone, Italy*) [University of Georgia, US]

2022-pres. Grace Elizabeth Cantele (*Determining mercury concentration in minerals, rocks, and soils at Mt Etna, Italy*) [University of Georgia, US]

2019 Alexia Secretan (*Magma cannibalism in volcanic and plutonic rocks*) [University of Lausanne, Switzerland]

Co-advisor of students and postdocs:

Postdocs:

2021-pres. Amy Ryan (*The Role of Deformation in Triggering Volcanic Eruptions*) [University of Minnesota; Advisor: L. Hansen]

Graduate students:

2019-21 Russell Cutts (*Mineralogical and textural alteration of heated tool-stones: advances in understanding fire-cracked rock*) [PhD; University of Georgia; Advisor: E. Garrison]

2019-20 Hüseyin Demir (*Mineral, elemental, and isotopic evidence for the provenance of clay deposits in Sile, NW Turkey*) [Master; University of Georgia; Advisor: P. Schroeder]

2018-pres. Thomas Herbst (*Degassing and outgassing of crystal-bearing dacite*) [Master/PhD; University of Missouri, Columbia, US; Advisor: A.G. Whittington]

2017-18 Selena Galdini (*Petrological, geochemical and rheological modelling of alkaline magma ascent at Fogo Volcano, Cape Verde*) [Master; University of Lausanne, Switzerland; Advisor: S. Pilet]

2013-14 Paul Jarvis (*Phenomena at the interface between two magmas*) [PhD; University of Bristol, United Kingdom; Advisors: J.D. Blundy, K.V. Cashman, H.M. Mader]

Jessica Shields (*Mobilisation of highly viscous flows: Insights from field and laboratory experiments*) [PhD; University of Bristol, United Kingdom; Advisor: H.M. Mader]

Undergraduate students:

2015 Katherine Sheppard (UC Santa Barbara) and Elizabeth Grant (University of Rhode Island (fieldwork in the Western Aleutians) [Undergraduates; Advisors: E. Cottrell, K.A. Kelley]

Mentor in other educational programs:

2021-22 Women in Science (WiSci) Mentorship Program of the University of Georgia

Service

- Member of the Scientific Committee of the 16th European Geopark Conference: https://www.egn2022conference.eu/index.php/organization/committees
- Peer-reviewed Journal Reviewer for 59 original scientific contributions (2013-present), as reported in my Publons profile: https://publons.com/author/1417956/mattia-pistone#profile
- Reviewer for funding agencies of NERC (United Kingdom), NSF (US), and ANR (France) (2014-present)
- Guest Editor of two Research Topics / Ebooks in Frontiers in Earth Science (2017-2020): *Volumes, Timescales, and Frequency of Magmatic Processes in the Earth's Lithosphere* and *Deep Carbon Science*
- Associate Editor of Frontiers in Earth Science – Section of Petrology (2019-present)
- Primary convener and co-convener of scientific sessions at AGU (2013, 2015-2022), EGU (2015-2019), IAVCEI (2017, 2023), and Centennial Symposium of MSA (2019)
- Organiser (out of 3) of the ICDP Workshop DIVE (Drilling the Ivrea-Verbano zonE) in Baveno, Italy (1st–4th May 2017)
- Organiser of the scientific meeting "Journée Petrologique Magmatique" in Lausanne, Switzerland (18th January 2019)
- Seminar organiser at the School of Earth Sciences, University of Bristol, United Kingdom (2013-2014)

Professional memberships

European (EGU) and American Geophysical Union (AGU), Mineralogical Society of America (MSA), Geological Society of America (GSA), Società Geologica Italiana (SGI), National Center for Faculty Development and Diversity (NCFDD), National Association of Geoscience Teachers (NAGT).

Engagement in science communication and outreach

2023 *Our Past, Present, and Future Below Our Feet: DIVE Drilling Project*, TEDxUGA Talk: https://www.youtube.com/watch?v=qvVHHZUex3E&ab_channel=TEDxTalks https://tedxuga.com/the-event-2023/#x-content-band-8

Top Stories of 2022, @UGAResearch: https://research.uga.edu/news/top-ugaresearch-stories-of-2022/

2022 Article on *Mattia Pistone travels through human & geological time*, @UGAResearch: https://research.uga.edu/news/mattia-pistone-travels-through-human-geological-time/

2021 Article on *Esplorando la zona di transizione tra crosta e mantello continentale: Il progetto DIVE nella Zona Ivrea-Verbano (Alpi, Italia)*, Società Geologica Italiana, GeologicaMente 6, https://doi.org/10.3301/GM.2021.06

Webinar on *Volatile cycle in the Earth's continental crust: A carbon tale from the Ivrea-Verbano Zone (Alps, Italy)*, Tech4Culture: Geodiversity and Geoheritage, University of Turin, Italy.

Article on *Research finds link between CO_2, big volcano eruptions*, @UGAResearch: https://research.uga.edu/news/research-finds-link-between-co2-big-volcano-eruptions/

2020 Webinar on *Tales of the "Far West" Aleutian Volcanoes: There and Back Again*, Osher Lifelong Learning Institute, University of Georgia, US.

Article on *DE BELLO VULCANICO: 40-year scientific effort of "predicting the unpredictable" since 1980 eruption of Mt St Helens* on EGU Blogs: https://blogs.egu.eu/divisions/nh/2020/07/06/de-bello-vulcanico/?fbclid=IwAR0WDq0vq_e32o4ARH9gukR8VymlyBaV606JGqY335plIqceT93bqv1kXrU

Essay on *DE BELLO VULCANICO or On The Volcanic War: 40-year scientific effort since May 18, 1980 eruption of Mt St Helens* on New Spotlights of Franklin College of UGA: https://www.franklin.uga.edu/news/stories/2020/40-years-mt-st-helens-eruption

2017 Article on *Lava highway in Kanaga Island* on Imaggeo on Mondays of the EGU Blogs: https://blogs.egu.eu/geolog/2017/03/20/imaggeo-on-mondays-lava-highway-in-kanaga-island/

2016 **Expert scientist** at Q?rius of the Museum of Natural History of the Smithsonian Institution

Article on *Ascensus ad coelum, descensus ad Inferos – Report from the Field - 2015 GeoPRISMS Community Platform in the Aleutians*, GeoPRISMS Newsletter, Issue no. 35, Spring 2016: http://anyflip.com/nnix/uzuv/basic

2013 News from Cabot Institute, University of Bristol: http://www.bristol.ac.uk/cabot/news/2013/278.html

2011-12 **Museum guide** at Focus Terra Museum of ETH-Zurich

Participation to selected schools and workshops

2023 Reflection on Race Workshop (University of Georgia)

Electric Mobility Summit (University of Georgia)

UGA Academy Teaching Symposium on AI tools

2020 Early Career Workshop (National Science Foundation)

2017 Mt Etna – Deep Carbon Observatory (DCO) Early Career Scientist Workshop (Nicolosi, Italy)

ICDP Workshop DIVE (Drilling the Ivrea-Verbano zonE) (Baveno, Italy)

2016 Second Deep Carbon Observatory (DCO) Summer School, Yellowstone National Park (Montana and Wyoming, US)

2010 Microstructures and Physico-Chemical Properties of Earth and Planetary Materials, Società Italiana di Mineralogia e Petrologia (Verbania-Pallanza, Italy)

Rheology and Physical Properties of Magmas: Controls on Dynamics of Magma Transport, Storage and Eruption (Zurich, Switzerland)

2009-13 4D-Adamello Pro-School (Swiss National Science Foundation)

Awards

2023 First-Year Odyssey Teaching Award, University of Georgia

M.G. Michael Award, Franklin College of Arts and Sciences, University of Georgia

2021 2021-2023 Lilly Teaching Fellowship, University of Georgia

2020 Outstanding Contribution in Reviewing Award by the Editorial Board of Lithos, Elsevier, Amsterdam, The Netherlands

2019 Outstanding Contribution in Reviewing Award by the Editorial Board of Earth and Planetary Science Letters, Elsevier, Amsterdam, The Netherlands

2017 Outstanding Contribution in Reviewing Award by the Editorial Board of Journal of Volcanology and Geothermal Research, Elsevier, Amsterdam, The Netherlands

2014 EU Transnational Access Programme CALIPSO Award

2012 Outstanding Young Scientist Award by the Earth Magnetism and Rock Physics Division of the EGU: https://www.egu.eu/awards-medals/ospp-award/2012/mattia-pistone/

2008 Excellence Award for Master Student of Earth Sciences, La Sapienza University, Rome, Italy

Research grants with PI, co-PI, or Mentor role (> 100,000 in bold)

Current Funds:

The excess gas paradox at volcanoes: does CO_2 favor gas accumulation in mafic magmas?, National Science Foundation – Division of Earth Science – Petrology and Geochemistry [**US$ 442,241**] Role: PI

The Role of Deformation in Triggering Volcanic Eruptions, National Science Foundation – Division of Earth Science – Postdoctoral Fellowship to Dr. Amy Ryan (University of Minnesota) [**US$ 174,000**] Role: Mentor

DE BELLO VULCANICO or The Volcanic War: Forecasting Gas Release versus Retention in Magmas prior to Volcanic Eruptions, UGA Sarah H. Moss Fellowship [US$ 10,000] Role: PI

DIVE: Drilling the Ivrea-Verbano zonE – Phase 1: Drilling into the pre-Permian mafic and felsic lower crust, International Continental Scientific Drilling Program (04-2020) [**US$ 1,000,000**] Role: PI out of 6

2023 *The excess gas paradox at volcanoes: does CO_2 favor gas accumulation in mafic magmas?*, National Science Foundation – Division of Earth Science – Petrology and Geochemistry (Award #2322935) [**US$ 442,241**] Role: PI

2022 *To be or not be in the Earth? Carbon cycle in the continental crust*, M.G. Michael Award, Franklin College of Arts and Sciences, University of Georgia [US$ 3,000] Role: PI

Tracking Mercury Pollution Sources: Developing an Analytical Method for Measuring Stable Mercury Isotopes in Environmental and Human Biological Samples, Teaming for Interdisciplinary Research Pre-Seed Program, University of Georgia [US$ 3,500] Role: co-PI

Chimborazo: ESPOCH International Conference, International Travel Fund of the Provost's Office, University of Georgia [US$ 1,850] Role: PI

MERRIE VOLCANO: MErcury Release during eRuptIons at Etna VOLCANO, Office of Research and Office of Global Engagement, University of Georgia, US [US$ 8,000] Role: PI

2021 *BIO-VOLCANO: Rocks, soils, and bioaccumulators as predictors of volcanic eruptions*, Teaming for Interdisciplinary Research Pre-Seed Program, University of Georgia [US$ 4,750] Role: PI

The Role of Deformation in Triggering Volcanic Eruptions, National Science Foundation – Division of Earth Science – Postdoctoral Fellowship to Dr. Amy Ryan (University of Minnesota) [**US$ 174,000**] Role: Mentor

2020 *DE BELLO VULCANICO or The Volcanic War: Forecasting Gas Release versus Retention in Magmas prior to Volcanic Eruptions*, Sarah H. Moss Fellowship, University of Georgia [US$ 10,000] Role: PI

DIVE: Drilling the Ivrea-Verbano zonE – Phase 1: Drilling into the pre-Permian mafic and felsic lower crust, International Continental Scientific Drilling Program (04-2020) [**US$ 1,000,000**] Role: PI out of 6

Felsic melt and gas mobilisation during magma solidification: An experimental study at 1.1 kbar, Swiss National Science Foundation, Open Access Article (PZAC-2_198187) [CHF 2,426] Role: PI

COOLEST VOLCANO: CO_2 stOrage and reLEase at Stromboli VOLCANO, Office of Research and Office of Global Engagement, University of Georgia [US$ 4,000] Role: PI

2019 *Fluids, melts and pressure changes during fracturing of the lower crust*, Terrestrial Magmatic System Research Platform, University of Mainz [€ 8,800] Role: co-PI

Bulk seismic properties of mantle wedge peridotites, Terrestrial Magmatic System Research Platform, University of Mainz [€ 5,000] Role: co-PI

DE BELLO VULCANICO or The Volcanic War: Forecasting Magma Permeability versus Compressibility and Eruption Magnitude, Swiss National Science Foundation – Eccellenza Professorial Fellowship (PCEFP2_186904) Role: PI [**CHF 999,988**] {renounced for the tenure-track Assistant Professorship at the University of Georgia}

2017 *The Deep Carbon Cycle (DCC) through geological time: An interdisciplinary synthesis of the carbon cycle in the Earth's lithosphere-biosphere system*, Alfred P. Sloan Foundation – Deep Carbon Observatory – DCO Synthesis Proposal (G-2017-9997) [**US$ 130,000**] Role: co-PI

2016 *Petrophysics of the Melt Connectivity Transition: Petrological, Rheological, and Seismic Characterisation of the Continental Moho*, Swiss National Science Foundation – Ambizione Fellowship (PZ00P2_168166) [**CHF 483,238**] Role: PI

2014 *Workshop on drilling the continental crust to the Moho transition zone (Ivrea-Verbano Zone, Italy)*, International Continental Scientific Drilling Program (17-2016) [US$ 50,000] Role: PI out of 3

The Influence of Volatiles on the Interaction of Mafic and Felsic Magmas, Swiss National Science Foundation – Advanced Postdoc Mobility Fellowship (P300P2_154574) [CHF 98,000] Role: PI {renounced for the NSF-GeoPRISMS Fellowship at the Smithsonian Institution, Washington, DC, US}

Understanding the dynamics of explosive eruptions triggered by mafic intrusions into felsic reservoirs using 4D in situ tomographic microscopy, European Union Transnational Access Programme CALIPSO (number 312284; FP7/2007-2013) [€ 1,000] Role: PI

2012 *The Influence of Volatiles on the Interaction of Mafic and Felsic Magmas*, Swiss National Science Foundation – Early Postdoc Mobility Fellowship (PBEZP2_142922) [CHF 43,000] Role: PI

2009-21 Free-of-cost access to synchrotron and nuclear facilities: eight for TOMCAT beamline, SLS, PSI and one for NEUTRA beamline, SINQ, PSI (Villigen, Switzerland), one for SYRMEP beamline, Elettra (Basovizza, Italy), one for ID19 beamline, ESRF (Grenoble, France), and two for GSECARS beamline, APS (Argonne, IL, US) [all combined proposals: **US$ 920,000**] Role: PI

Instructional grants with PI, co-PI, or Mentor role (> 100,000 in bold)

2023 First-Year Odyssey Teaching Award, University of Georgia [US$ 2,500] Role: PI

2022 *Lilly Teaching Fellowship*, UGA Center For Teaching & Learning [US$ 2,000] Role: PI

Studies of Hazards (SHAZARDS) in Geology, GradFIRST Seminar Program, UGA – Franklin College of Arts & Science [US$ 3,500] Role: PI

MAGMA MIA! Understanding active volcanoes with modern petrology, First-Year Odyssey Program, UGA – Franklin College of Arts & Science [US$ 3,500] Role: PI

Journey into the Earth's interior: exploring the origin, architecture, and dynamics of continents, First-Year Odyssey Program, UGA – Franklin College of Arts & Science [US$ 3,500] Role: PI

Flow or blow? Understanding the physics of gas accumulation leading to explosive volcanic eruptions through experiential learning in lab and class with a gas pycnometer, UGA Learning Technologies Grant [US$ 18,470] Role: PI

2021 *Replicating minerals to volcanoes by 3D printing technology: bringing 3D geology across scales into the classroom and in the field*, UGA Learning Technologies Grant [US$ 9,984] Role: PI

MAGMA MIA! Understanding active volcanoes with modern petrology, First-Year Odyssey Program, UGA – Franklin College of Arts & Science [US$ 3,500] Role: PI

Writing Fellows, UGA – Center for Teaching and Learning [US$ 1,000] Role: PI

Faculty Interest Group, UGA – Center for Teaching and Learning [US$ 1,000] Role: PI

2020 *MAGMA MIA! Understanding active volcanoes with modern petrology*, First-Year Odyssey Program, UGA – Franklin College of Arts & Science [US$ 3,842] Role: PI

Rock Digitalization for Optical Microscopy, UGA – Franklin College of Arts & Science [US$ 1,147] Role: PI

4D PETROLAB: A New Digital Frontier for Learning Optical Microscopy of Geological Materials in 3D Space and Real-Time, UGA Learning Technologies Grant [US$ 24,263] Role: PI

Peer-reviewed publication list

Articles:

2023

Sarmiento FO, Haller A, Marchant C, Yoshida M, Leigh DS, Woosnam K, Porinchu DF, Gandhi K, King EG, **Pistone M**, Kavoori A, Calabria J, Alcántara-Ayala I, Chávez R, Gunya A, Yépez A, Lee S, Reap J (2023) 4D Global Montology: Toward convergent and transdisciplinary mountain sciences across time and space. *Pirineos*, 178, e075, https://doi.org/10.3989/pirineos.2023.178001

2022

Ryan A, Hansen LN, Zimmermann ME, **Pistone M** (2022) Melt migration in crystal mushes by viscous fingering: insights from high-temperature, high-pressure experiments. *Journal of Geophysical Research - Solid Earth*, 127, e2022JB024447, https://doi.org/10.1029/2022JB024447

Pistone M, Formo E, Whittington AG, Herbst T, Cottrell E (2022) Direct nanoscale observations of degassing-induced crystallisation in felsic magmas. *Contributions to Mineralogy and Petrology*, 177, 38, https://doi.org/10.1007/s00410-022-01900-1

Zahirovic S, Eleish A, Doss S, Pall J, Cannon J, **Pistone M**, Tetley MG, Young A, Fox P (2022) Subduction and carbonate platform interactions. *Geoscience Data Journal*, 2022:00, 1-13, https://doi:10.1002/gdj3.146

2021

Pistone M, Fife JL, Tisato N, Caricchi L, Reusser E, Ulmer P, Mader K, Marone F (2021) Seismic attenuation during magma vesiculation: A combination of laboratory constraints and modeling. *Geophysical Research Letters*, 48, e2020GL092315, https://doi.org/10.1029/2020GL092315

2020

Pistone M, Ziberna L, Hetényi G, Scarponi M, Zanetti A, Müntener O (2020) Joint geophysical-petrological modeling on the Ivrea geophysical body beneath Valsesia, Italy: Constraints on the continental lower crust. *Geochemistry, Geophysics, Geosystems*, 21, e2020GC009397, https://doi.org/10.1029/2020GC009397

Pistone M, Caricchi L, Ulmer P (2020) CO_2 favors the accumulation of excess fluids in felsic magmas. *Terra Nova*, 2020;00:1-9. https://doi.org/10.1111/ter.12496

Scarponi M, Hetényi G, Berthet T, Baron L, Manzotti P, Petri B, **Pistone M**, Müntener O (2020) New gravity data and 3D density model constraints on the Ivrea Geophysical Body (Western Alps). *Geophysical Journal International*, ggaa263, https://doi.org/10.1093/gji/ggaa263

Pistone M, Baumgartner LP, Bégué F, Jarvis P, Bloch E, Robyr M, Müntener O, Sisson TW, Blundy JD (2020) Felsic melt and gas mobilisation during magma solidification: An experimental study at 1.1 kbar. *Frontiers in Earth Science*, 8, 175, https://doi.org/10.3389/feart.2020.00175

Pistone M, Racek M, Štípska P (2020) Effects of diffusion of water and migration of melts in crustal rocks: an experimental study. *Chemical Geology*, 540, 119548, https://doi.org/10.1016/j.chemgeo.2020.119548

Petri B, Almqvist BSG, **Pistone M** (2020) 3D rock fabric analysis using micro-tomography: an introduction to the open source TomoFab Matlab code. *Computers & Geosciences*, 138, 104444, https://doi.org/10.1016/j.cageo.2020.104444

2018

Kudrna-Prašek M, **Pistone M**, Baker DR, Sodini N, Marinoni N, Lanzafame G, Mancini L (2018). A compact and flexible induction furnace for in-situ X-ray microradiograhy and computed microtomography at Elettra: characterisation and first tests. *Journal of Synchrotron Radiation*, 25, https://doi:10.1107/S1600577518005970

2017

Pistone M, Müntener O, Ziberna L, Hetényi G, Zanetti A (2017) Report on the ICDP Workshop DIVE (Drilling the Ivrea-Verbano zonE). *Scientific Drilling*, 23, 47-56, https://doi.org/10.5194/sd-23-47-2017

Pistone M, Whittington AG, Andrews BJ, Cottrell E (2017) Crystal-rich lava dome extrusion during vesiculation: an experimental study. *Journal of Volcanology and Geothermal Research*, 347, 1-14, https://doi.org/10.1016/j.jvolgeores.2017.06.018

Morrison S, **Pistone M**, Kohl L (2017) Studying Yellowstone by integrating deep carbon science. *EOS,* 98*,* https://doi.org/10.1029/2017EO076209

Pistone M, Blundy JD, Brooker RA, EIMF (2017) Water transfer during magma mixing events: insights into melt segregation from felsic crystal mushes. *American Mineralogist*, 102, 766-776 http://dx.doi.org/10.2138/am-2017-5793

2016

Zellmer GF, **Pistone M**, Iizuka Y, Andrews BJ, Gomez-Tuena A, Straub SM, Cottrell E (2016) Petrogenesis of antecryst-bearing arc basalts from the Trans-Mexican Volcanic Belt: insights into along-arc variations in magma ponding depths, H_2O contents, and surface heat flux. *American Mineralogist*, 101, 2405-2422, https://doi.org/10.2138/am-2016-5701

Pistone M, Cordonnier B, Ulmer P, Caricchi L (2016) Rheological flow laws for multiphase magmas: an empirical approach. *Journal of Volcanology and Geothermal Research*, 321, 158-170, https://doi.org/10.1016/j.jvolgeores.2016.04.029

Shields J, Mader HM, Caricchi L, Tuffen H, Mueller S, **Pistone M**, Baumgartner L (2016) Unravelling textural heterogeneity in obsidian: shear-induced outgassing in the Rocche Rosse flow. *Journal of Volcanology and Geothermal Research*, 310, 137-158, https://doi.org/10.1016/j.jvolgeores.2015.12.003

Pistone M, Blundy JD, Brooker RA, EIMF (2016) Textural and chemical consequences of interaction between hydrous mafic and felsic magmas: an experimental study. *Contributions to Mineralogy and Petrology*, 171, https://doi:10.1007/s00410-015-1218-4

2015

Pistone M, Caricchi L, Fife JL, Mader K, Ulmer P (2015) In situ X-ray tomographic microscopy observations of vesiculation of bubble-free and bubble-bearing magmas. *Bullettin of Volcanology*, 77, https://doi:10.1007/s00445-015-0992-1

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Cordonnier B, Caricchi L, **Pistone M**, Castro J, Hess K-U, Gottschaller S, Manga M, Dingwell DB, Burlini L (2012) Direct observation of magma rupture and healing. *Geology*, 40, 611-615, https://doi.org/10.1130/G3914.1

Fife JL, Rappaz M, **Pistone M**, Celcer T, Mikuljan G, Stampanoni M (2012) Development of a laser-based heating system for in-situ synchrotron-based X-ray tomographic microscopy. *Journal of Synchrotron Radiation*, 19, 352-358, https://doi:10.1107/S0909049512003287 [This study on journal volume cover]

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Caricchi L, Pommier A, **Pistone M**, Castro J, Burgisser A, Perugini D (2011) Strain-induced magma degassing: insights from simple-shear experiments on bubble bearing melts. *Bulletin of Volcanology*, 73, 1245-1257, https://doi:10.1007/s00445-011-0471-2

Books (*), book chapters (**), and editorials (***):

2021

** Jarvis PA, **Pistone M**, Secretan A, Blundy JD, Cashman KV, Mader HM, Baumgartner LP (2021) Crystal and volatile controls on the mixing and mingling of magmas. In Masotta M (ed), Crustal Magmatic System Evolution: Anatomy, Architecture and Physico-Chemical Processes, *AGU Book*, https://doi.org/10.1002/9781119564485.ch6

2020

*** Cardace D, Bower DJ, Daniel I, Ionescu A, Mikhail S, **Pistone M,** Zahirovic S (2020) Editorial: Deep Carbon Science. *Frontiers in Earth Science*, 8, 611295, https://doi:10.3389/feart.2020.611295

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Data Repositories:

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2020

Pistone M, Ziberna L, Hetényi G, Scarponi M, Zanetti A, Müntener O. (2020) Data Tables from contribution titled "Joint geophysical-petrological modeling on the Ivrea geophysical body beneath Valsesia, Italy: Constraints on the continental lower crust" published in Geochemistry, Geophysics, Geosystems. *Zenodo*, https://zenodo.org/record/4247516#.X6QjdttCdYg, https://doi:10.5281/zenodo.4247516

Invited seminars (*) and webinars (**)

*(May 2023) *Lessons from the ICDP–DIVE project exploring the roots of magmatic plumbing systems in the lower continental crust*, Workshop on Genesis and dynamics of large calderas: Campi Flegrei and Campanian Plain, Naples, Italy.

*(Nov 2022) *Magma Mia! What happens before a volcanic eruption? Analysis of magma unrest using laboratory-scale in situ, time-resolved techniques*, Department of Geosciences and Geological and Petroleum Engineering, Missouri University of Science and Technology, US.

**(Nov 2022) *De Bello Vulcanico*, Department of Engineering and Geology, Università Gabriele D'Annunzio, Italy.

**(May 2022) *DE BELLO VULCANICO*, Department of Earth Sciences, University of Pavia, Italy.

*(Apr 2022) *How, How Fast, How Big will the Volcano Erupt? Lessons from Chimborazo Volcano*, 50th Anniversary of Escuela Superior Politécnica de Chimborazo International Conference, Riobamba, Ecuador.

*(March 2022) *How, How Fast, How Big will the Volcano Erupt?: Deciphering Magma Transport, Unrest, and Eruption using Transdisciplinary Approaches*, Department of Geology and Geophysics, Louisiana State University, US.

*(Feb 2022) *Volcanomania*, Warnell School of Forestry and Natural Resources, University of Georgia, US.

*(Oct 2021) *How, How Fast, How Big will the Volcano Erupt?: Deciphering Magma Transport, Unrest, and Eruption using Transdisciplinary Approaches*, Department of Geosciences, University of Fribourg, Switzerland.

*(Sep 2021) *Magmas and volcanoes: Decoding the chemical signals leading to magma unrest and eruption*, Department of Chemistry, Franklin College of Arts and Sciences, University of Georgia, US.

**(Apr 2021) *DE BELLO VULCANICO*, Department of Earth Sciences, University of Pavia, Italy.

**(Feb 2021) *DE BELLO VULCANICO: the competition between gas storage and gas release in magmatic systems prior to eruptions*, School of Geographical and Earth Sciences, University of Glasgow, United Kingdom.

**(Dec 2020) *DE BELLO VULCANICO: the competition between gas storage and gas release as a function of magma rheology and geochemistry of excess fluids*, Department of Earth Sciences, Royal Holloway University of London, United Kingdom.

**(Oct 2020) *Drilling the Ivrea-Verbano zonE (DIVE): Diving into the pillars of the Earth's continental crust*, Department of Earth, Environment, and Resources, Università degli Studi di Napoli Federico II, Italy.

*(Feb 2020) *DE BELLO VULCANICO: Constraining gas storage versus release in magmas*, Department of Earth and Environmental Sciences, Vanderbilt University, US.

*(Nov 2019) *DE BELLO VULCANICO: Constraining gas storage versus release in magmas and eruption magnitude of active volcanoes*, Department of Geological Sciences, University of Florida, US.

*(Oct 2019) *ICDP Proposal on Drilling the Ivrea-Verbano zonE (DIVE)*, International School on "Structure and Composition of the Lower Continental Crust", University of Pavia, Italy.

*(Oct 2019) *DE BELLO VULCANICO: Constraining rheology, permeability, and compressibility of magmas and eruption magnitude of active volcanoes*, Institute of Geosciences, University of Mainz, Germany.

*(Apr 2019) *Melt, volatile, and magma transport in the Earth's crust: A petrological trilogy*, Department of Geology, University of Georgia, US.

*(Mar 2019) *DE BELLO VULCANICO: Constraining rheology, permeability, and compressibility of magmas and eruption magnitude of active volcanoes*, School of Earth and Environment, University of Leeds, United Kingdom.

*(Feb 2019) *DE BELLO VULCANICO: Constraining rheology, permeability, and compressibility of magmas and eruption magnitude of active volcanoes*, Department of Geology, University at Buffalo, US.

*(Nov 2018) *Magmatic fluid extraction from the Earth's crust to volcanoes*, Bayerisches Geoinstitut, University of Bayreuth, Germany.

*(Oct 2018) *DIVE into the pillars of Earth: Drilling into the Ivrea-Verbano zonE*, Deep Carbon Observatory Executive Committee Meeting, Department of Earth Sciences, ETH-Zurich, Switzerland.

*(Apr 2018) *Geochemical cycles and carbon fluxes from Large Igneous Provinces*, Deep Carbon Observatory Workshop, Department of Earth Sciences, University of Cambridge, United Kingdom.

*(Jan 2018) *Melt extraction during heating and cooling of felsic crystal mushes: an experimental study*, Journée Magmatique, Department of Earth Sciences, ETH-Zurich, Switzerland.

*(Dec 2017) *Yet it moves: melt migration processes during magma solidification*, Department of Earth Sciences, University of Geneva, Switzerland.

*(Nov 2017) *Melt extraction processes in multiphase magmas: from the Earth's crust to volcanoes*, Department of Earth Sciences, University of Milan, Italy.

*(Mar 2017) *Chemistry and physics of multiphase magmas: insights into melt extraction processes*, Department of Earth Sciences, University of Uppsala, Sweden.

*(Mar 2017) *Chemistry and physics of multiphase magmas: insights into melt extraction processes*, Department of Earth Sciences, University of Toronto, Canada.

*(Feb 2016) *Chemistry and physics of multiphase magmas: insights into magma transport, storage, and eruption*, Department of Earth, Marine, and Environmental Sciences, University of Chapel Hill, NC, US.

*(Jan 2016) *3D and 4D insights into geological samples and processes using X-ray tomographic microscopy*, Geological Society of Washington, Cosmos Club, Washington, DC, US.

*(Nov 2015) *Chemistry and physics of multiphase magmas: insights into magma transport, storage, and eruption*, Geophysical Laboratory, Carnegie Institution for Science, Washington, DC, US.

*(Oct 2015) *Chemistry and physics of multiphase magmas: insights into magma transport, storage, and eruption*, Department of Geology, University of Maryland, College Park, MD, US.

*(Jul 2015) *3D and 4D insights into geological samples and processes using X-ray tomographic microscopy*, Air and Space Museum, Smithsonian, Washington, DC, US.

*(Apr 2015) *Water-driven undercooling during the interaction between mafic and felsic hydrous magmas*, Centre of Lithosphere of Geological Survey, Prague, Czech Republic.

*(Mar 2015) *Water-driven undercooling during the interaction between mafic and felsic hydrous magmas*, Department of Geosciences, Virginia Tech, Blacksburg, VA, US.

*(Sep 2014) *4D Experiments with Synchrotron-based X-ray Tomographic Microscopy: The New Frontier of the Experimental Volcanology*, Elettra Synchrotron, Basovizza, Italy.

*(Jun 2014) *The influence of volatiles during mafic and felsic magma interaction*, Faculty of Geoscience and Geography, Georg-August-Universität, Göttingen, Germany.

*(Apr 2014) *The influence of volatiles during mafic and felsic magma interaction*, Department of Geological Sciences, Washington University in St Louis, MO, US.

*(Apr 2014) *The influence of volatiles during mafic and felsic magma interaction*, Department of Geological Sciences, University of Missouri, Columbia, MO, US.

*(Apr 2013) *Rheology of crystal- and bubble-bearing magmas: insights into volcanic conduit dynamics*, European Geophysical Union Conference, Vienna, Austria.

Conference poster [@], PICO [ç], and oral presentations [#]; supervised students (*)

1. Li J., Greenwood A., Caspari E., Pierdominici S., Kück J., Baron L., Hetényi G., Müntener O., Ziberna L., Zanetti A., **Pistone M.**, DIVE Drilling Project Science Party (2023) *Drilling the Ivrea-Verbano zonE project: DT-1b borehole geophysics*, EGU Spring Meeting 2023 (Vienna, Austria), https://doi.org/10.5194/egusphere-egu23-11796 [#]
2. Mansouri H., Toy V., Klimm K., Bagdassarov N., **Pistone M.**, Greenwood A., Hetényi G. (2003) *Quantification of electrical properties of deep crustal rocks based on their mineral modal proportion, fabric, and pressure-temperature conditions*, EGU Spring Meeting 2023 (Vienna, Austria), https://doi.org/10.5194/egusphere-egu23-5997 [@]
3. Müntener O., Hetényi G., Greenwood A., Ziberna L., Zanetti A., **Pistone M.**, Giovannelli D., DIVE Drilling Project Science Party (2023) *Preliminary results from the ICDP - DIVE project: Hole DT-1b (Ornavasso, Italy)*, EGU Spring Meeting 2023 (Vienna, Austria), https://doi.org/10.5194/egusphere-egu23-11174 [#]
4. Ryan A., Hansen L., Zimmerman M., **Pistone M.** (2023) *Rapid melt migration as mushes "unlock" during high-temperature, high-pressure experiments*, IAVCEI 2023 (Rotorua, New Zealand) [#]
5. Daniel C.*, Jorgenson C., Musu A., Corsaro R., Stuckelberger M., Caricchi L., **Pistone M.** (2022) *3D tomographic analysis of volcanic tephra from the 2020-2022 activity of Mt. Etna: Insights into magma porosity and crystallinity, and eruption style and intensity*, AGU Fall Meeting 2022 (Chicago, IL, US) [@]
6. Ryan A., Hansen L., Zimmerman M., **Pistone M.** (2022) *Rapid melt migration when mushes "unlock": Observations from high-temperature, high-pressure experiments*, AGU Fall Meeting 2022 (Chicago, IL, US) [#]
7. **Pistone M.**, Arzilli F., Teasdale R., Brooker R.A., Iezzi G., Blundy J.B. (2022) *Can Degassing-induced Undercooling and Crystallisation Control Eruptible Magma Volume?*. AGU Fall Meeting 2022 (Chicago, IL, US) [@]
8. Toy V., Mansouri H., Greenwood A., Junge A., **Pistone M.**, Klimm K., Pieper L. (2022) *Multi-scale calibrations of rock masses electrical properties around the DIVE drillsite*, 2022 IODP/ICDP Colloquium (Potsdam, Germany) [@]

9. Toy V., Mansouri H., Kirilova M., **Pistone M.**, Zanetti A., Ohl M. (2022) *Can combined geometric, thermobarometric and microstructural data elucidate formation mechanics of dikes in the mantle lithosphere?*, 2022 Gordon Research Conference on Rock Deformation (Lewiston, ME, US) [@]

10. Hetényi G., Müntener O., Holliger K., Rubatto D., Hermann J., Greenwood A., Ziberna L., **Pistone M.**, Zanetti A., and the broad international DIVE Team (2022) *Drilling the Ivrea-Verbano zonE: DIVE project aim, status and Swiss component*, Swiss Drilling Day (Lausanne, Switzerland) [#]

11. Greenwood A., Hetényi G., Ziberna L., **Pistone M.**, Zanetti A., Müntener O., Project DIVE Team (2022) *Project DIVE (Drilling the Ivrea-Verbano zonE): A joint petrological, geochemical, and geophysical exploration of the lower continental crust*, 15th Emile Argand Conference on Alpine Geological Studies (Ljubljana, Slovenia) [#]

12. Hetényi G., Baron L., Scarponi M., Subedi S., Michailos K., Dal F., Gerle A., Petri B., Langone A., Greenwood A., Ziberna L., **Pistone M.**, Zanetti A., Müntener O. (2022) *Crowd modelling: Launching an open gravity-modelling call to challenge the Balmuccia peridotite body*, EGU Spring Meeting 2022 (Vienna, Austria), https://doi.org/10.5194/egusphere-egu22-4230 [#]

13. Wiggers C., Galerne C., Acosta M., **Pistone M.**, Bach W., Kahl W.-A., Burwicz-Galerne E., Monien P., Baumgartner L.P., Höfig T., Klügel A. (2022) *Microstructural and chemical investigation of magma-sediment mingling in natural and laboratory samples*, EGU Spring Meeting 2022 (Vienna, Austria), https://doi.org/10.5194/egusphere-egu22-9301 [#]

14. Ryan A.G., Hansen L.N., Zimmerman M.E., **Pistone M.** (2022) *An experimental study of melt migration in crystal-rich mushes*, EGU Spring Meeting 2022 (Vienna, Austria), https://doi.org/10.5194/egusphere-egu22-1543 [#]

15. **Pistone M.**, Arzilli F., Teasdale R., Brooker R.A., Iezzi G., Blundy J.B. (2022) *Can Degassing-induced Undercooling and Crystallisation Control Eruptible Magma Volume?*. EGU Spring Meeting 2022 (Vienna, Austria), https://doi.org/10.5194/egusphere-egu22-5279 [#]

16. **Pistone M** (2022) *How, How Fast, How Big will the Volcano Erupt? Lessons from Chimborazo Volcano*, 50th Anniversary of Escuela Superior Politécnica de Chimborazo International Conference (Riobamba, Ecuador) [#]

17. Maendel A.*, **Pistone M.**, Petri P., Hames W., Ulyanov A., Reubi O., Putlitz B., Müntener O. (2022) *Investigating a recently discovered olivine-gabbro from the Ivrea Verbano Zone: New insights into magmatic differentiation in the lower continental crust*, Northeast/Southeast Geological Society of America Spring Meeting 2022 (Cincinnati, USA) [@]

18. **Pistone M.**, Formo E., Whittington A.G., Herbst T., Cottrell E. (2021) *Direct nanoscale observations of degassing-induced crystallisation in felsic magmas*, AGU Fall Meeting 2021 (New Orleans, LA, US) [#]

19. Maendel A.*, Bégué F., Ulyanov A., Reubi O., Putlitz B., Bomou B., Adatte T., Müntener O., **Pistone M.** (2021) *Interrogating a newly found olivine gabbro in the Ivrea Verbano Zone: preliminary data on magma differentiation in the lower continental crust*, AGU Fall Meeting 2021 (New Orleans, LA, US) [@]

20. Oxhorn S.*, **Pistone M.** (2021) *Western Aleutian Volcanism; Defining Magmatic Series Transitions and Petrogenetic Origins by Utilizing Gareloi and Kiska Volcanoes*, AGU Fall Meeting 2021 (New Orleans, LA, US) [@]

21. Herbst T., Whittington A.G., **Pistone M.**, Schiffbauer J.D., Selly T. (2021) *The volcanic explosive-effusive transition: Insights from a crystallinity-based permeability model*, AGU Fall Meeting 2021 (New Orleans, LA, US) [#]

22. **Pistone M.**, Ziberna L., Hetényi G., Scarponi M., Zanetti A., Müntener O. (2021) *Joint Geophysical-Petrological Modeling on the Ivrea Geophysical Body Beneath Valsesia, Italy: Constraints on the Continental Lower Crust*, Swiss Geoscience Meeting 2021 (Geneva, Switzerland) [@]

23. **Pistone M.**, Ziberna L., Hetényi G., Scarponi M., Zanetti A., Müntener O. (2021) *Joint Geophysical-Petrological Modeling on the Ivrea Geophysical Body Beneath Valsesia, Italy: Constraints on the Continental Lower Crust*, Società Geologica Italiana 2021 (Trieste, Italy), https://underline.io/lecture/33806-joint-geophysical-petrological-modeling-on-the-ivrea-geophysical-body-beneath-valsesia-italy-constraints-onthe-continental-lower-crust [#]

24. Herbst T., Whittington A.G., **Pistone M.**, Schiffbauer J.D., Selly T. (2021) *The volcanic explosive-effusive transition: insights from a crystallinity-based permeability*, GSA Meeting Meeting 2021 (Portland, US), https://doi.org/10.1130/abs/2021AM-370759 [#]

25. **Pistone M.**, Caricchi L., Ulmer P. (2021) *CO_2 favours the accumulation of excess fluids in felsic magmas*. Goldschmidt 2021 (Lyon, France), https://doi.org/10.7185/gold2021.8264 [#]

26. **Pistone M.**, Fife J.L., Tisato N., Caricchi L., Reusser E., Ulmer U., Mader K., Marone F. (2021) *Seismic Attenuation During Magma Vesiculation: A Combination of Laboratory Constraints and Modeling*. GNGTS (Trieste, Italy) [#]

27. **Pistone M.**, Caricchi L., Ulmer P. (2021) *CO_2 favours the accumulation of excess magmatic fluids*. EGU Spring Meeting 2021 (Vienna, Austria), https://doi.org/10.5194/egusphere-egu21-8094 [ç]

28. **Pistone M.**, Caricchi L., Ulmer P. (2020) *CO_2 favors the accumulation of excess magmatic fluids*. AGU Fall Meeting 2020 (San Francisco, CA, US) [#]

29. Herbst T., Whittington A.G., **Pistone M.**, Schiffbauer J.D., Selly T. (2020) *The volcanic explosive-effusive transition explained by competing outgassing mechanisms*, GSA Meeting Connects Online meeting 2020 (San Francisco, CA, US) [#]

30. Greenwood A., Baron L., Hetényi G., **Pistone M.**, Liu Y., Holliger K., Ziberna L., Zanetti A., Müntener O. (2020) *Reflection seismic surveys to site the Drilling the Ivrea Verbano zonE (DIVE) proposed drill-holes, Val Sesia and Val d'Ossola, Italy*. EGU Spring Meeting 2020 (Vienna, Austria) [#]

31. Greenwood A., Baron L., Hetényi G., **Pistone M.**, Liu Y., Holliger K., Ziberna L., Zanetti A., Müntener O., Urosevic M., Ziramov S. (2020) *Active seismic surveys to site the Drilling the Ivrea zone (DIVE) drill-holes, Val Sesia and Val d'Ossola, Italy*. Seismix 2020 – 19th International Symposium (Perth, Australia) [#]

32. **Pistone M.**, Ziberna L., Hetényi G., Scarponi M., Zanetti A., Müntener O. (2019) *Deciphering the petrophysics and petrology of the Ivrea Geophysical Body (Alps) by combining laboratory data and thermodynamic modelling*. AGU Fall Meeting 2019 (San Francisco, CA, US) [@]

33. Herbst T., Whittington A.G., **Pistone M.**, Schiffbauer J.D., Selly T. (2019) *Room to grow, room to blow! The influence of crystals on bubble-driven inflation and outgassing of dacitic magmas*, AGU Fall Meeting 2019 (San Francisco, CA, US) [@]

34. Greenwood A., Baron L., Hetényi G., **Pistone M.**, Holliger K., Ziberna L., Zanetti A., Müntener O. (2019) *Active seismic surveys at project DIVE's three drilling target sites, Ivrea Zone, Northern Italian Alps*. Swiss Geoscience Meeting 2019 (Fribourg, Switzerland) [@]

35. **Pistone M.**, Caricchi L., Ulmer P. (2019). *Carbonic fluids favor excess gas accumulation and increase eruption magnitude*. DCO 2019 (Washington, DC) [@]

36. **Pistone M.**, Ziberna L., Hetényi G., Zanetti A., Müntener O. (2019). *Predicting the chemical composition of the Ivrea geophysical body: A petrophysical and petrological analysis*. EGU Spring Meeting 2019 (Vienna, Austria) [#]

37. Müntener O., **Pistone M.** (2019). *Bulk crustal composition and modulations by magmatic additions*. EGU Spring Meeting 2019 (Vienna, Austria) [#]

38. Jollands M., **Pistone M.**, Müntener O., Tollan P., (2019). *Hydrogen diffusion in quartz: a new tool to unravel the last instants of unrest of felsic volcanism*. EGU Spring Meeting 2019 (Vienna, Austria) [@]

39. Petri B., Almqvist B.S.G., **Pistone M.**, Müntener O. (2019). *3D rock fabric analysis with X-ray computed microtomography and application to the Ivrea mafic complex (N Italy)*. EGU Spring Meeting 2019 (Vienna, Austria) [ç]

40. **Pistone M.**, Petri B., Müntener O., Almqvist B.S.G., Zappone A.S., Hetényi G., Zanetti A., Baumgartner L.P. (2018). *Unravelling magma emplacement mechanism in the lower crust: a forensic investigation of the Mafic Complex, Ivrea-Verbano Zone (Italy)*. AGU Fall Meeting 2018 (Washington, DC, US) [@]

41. Jollands M., **Pistone M.**, Müntener O. (2018). *Unravelling the eruptive timescales of a Permian supervolcano with quartz diffusion chronometry*. AGU Fall Meeting 2018 (Washington, DC, US) [@]

42. Almqvist B.S.G., Piazolo S., **Pistone M.** (2018). *Evaluating compositional layering as a source for elastic anisotropy in the lithosphere*. AGU Fall Meeting 2018 (Washington, DC, US) [#]

43. Whittington A.G., Herbst T., **Pistone M.**, Schiffbauer J., Selly T. (2018). *Degassing and outgassing of crystal-bearing dacite*. AGU Fall Meeting 2018 (Washington, DC, US) [#]

44. **Pistone M.**, Petri B., Müntener O., Almqvist B.S.G., Zappone A.S., Hetényi G., Zanetti A., Baumgartner L.P. (2018). *Unravelling magma emplacement mechanism in the lower crust: a forensic investigation of the Mafic Complex, Ivrea-Verbano Zone (Italy)*. AGU Fall Meeting 2018 (Washington, DC, US) [@]

45. **Pistone M.**, Petri B., Müntener O., Almqvist B.S.G., Zappone A.S., Hetényi G., Zanetti A., Baumgartner L.P. (2018). *Unravelling magma emplacement mechanism in the lower crust: a forensic investigation of the Mafic Complex, Ivrea-Verbano Zone (Italy)*. Swiss Geoscience Meeting 2018 (Bern, Switzerland) [@]

46. Herbst T., Whittington A.G., **Pistone M.**, Schiffbauer J., Selly T. (2018). *Experimental vesiculation and outgassing of crystal-bearing dacit*e. GSA 2018 Annual Meeting (Indianapolis, IN, US) [#]

47. Whittington A.G., Herbst T., **Pistone M.**, Schiffbauer J., Selly T. (2018). *Experimental vesiculation and outgassing of crystal-bearing dacite*. CoV 2018 (Naples, Italy) [#]

48. Greenwood A., Baron L., Merz K., Langone A., Petri P., Kard A.O., Zanetti A., **Pistone M.**, Hetényi G., Weber M., Müntener O., Holliger K. (2018). *High-resolution active seismic survey across the Insubric Line*. EGU Spring Meeting 2018 (Vienna, Austria) [@]

49. **Pistone M.**, Petri B., Müntener O., Almqvist B.S.G., Zappone A.S., Hetényi G., Ziberna L., Zanetti A., Baumgartner L.P. (2018). *Petro-rheological and geophysical characterisation of the Mafic Complex, Ivrea-Verbano Zone (Italy): A work-in-progress on the correlation of crustal lithostratigraphy and geophysical structures of the Earth's lower crust*. EGU Spring Meeting 2018 (Vienna, Austria) [@]

50. **Pistone M.**, Caricchi L., Ulmer P., Reusser E. (2018). *Volatiles in excess in crystallising magmas: Consequences of crystal mush degassing, outgassing, and pressurisation in the Earth's crust*. EGU Spring Meeting 2018 (Vienna, Austria) [#]

51. **Pistone M.**, Baumgartner L.P., Sisson T.W., Bloch E. (2017). *Melt extraction during heating and cooling of felsic crystal mushes in shallow volcanic systems: An experimental study*. AGU Fall Meeting 2017 (New Orleans, LO, US) [#]

52. Hetényi G., **Pistone M.**, Nabelek P., Baumgartner L.P. (2017). *Partial melting during high-grade metamorphism: Implications for orogenic systems*. AGU Fall Meeting 2017 (New Orleans, LO, USA) [#]

53. **Pistone M.** (2017). *Chemical and physical aspects of fluid extraction from the Earth's crust*. DCO Early Career Scientist Workshop 2017 (Catania, Italy) [#]

54. **Pistone M.**, Baumgartner L., Sisson T.W., Bloch E. (2017). *Heating or cooling felsic crystal mushes to extract melt? An experimental evaluation of melt extraction efficiency in shallow volcanic systems*. IAVCEI 2017 (Portland, OR, USA) [#]

55. **Pistone M.**, Whittington A.G., Andrews B.J., Cottrell E. (2016). *Crystal-rich lava dome extrusion during vesiculation: an experimental study*. AGU Fall Meeting 2016 (San Francisco, USA) [#]

56. **Pistone M.**, Arzilli F., Cordonnier B., Dobson K.J., Reusser E., Ulmer P., Marone F., Whittington A.G., Mancini L., Fife J.L., Blundy J.D. (2015). *Gas-driven filter pressing: insights into melt segregation from crystal mushes*. AGU Fall Meeting 2015 (San Francisco, USA) [#]

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58. **Pistone M.**, Blundy J.D., Brooker R.B., Hinton R. (2014). *Water-driven undercooling during the interaction of mafic and felsic magmas*. AGU Fall Meeting 2014 (San Francisco, USA) [@]

59. **Pistone M.**, Jarvis P., Blundy J.D. (2013). *The influence of volatiles on the felsic-mafic magma interaction*. AGU Fall Meeting 2013 (San Francisco, USA) [@]

60. Ulmer P., Nandedkar R., Muntener O., **Pistone M.**, Caricchi L. (2013). *Fractional crystallization experiments from olivine-tholeiite to rhyolite at mid-crustal conditions and consequences for liquid extraction and magma transport*. IAVCEI 2013 (Kagoshima, Japan) [#]

61. **Pistone M.**, Caricchi L., Fife J.L., Mader K., Ulmer P., Marone F. (2013). *Bubble coalescence in magmas: insights from in-situ high-temperature synchrotron-based X-ray tomographic microscopy*. IAVCEI 2013 (Kagoshima, Japan) [#]

62. **Pistone M.**, Caricchi L., Ulmer P. (2013). *Rheology of crystal- and bubble-bearing magmas: insights into the volcanic conduit dynamics*. IAVCEI 2013 (Kagoshima, Japan) [#]

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64. **Pistone M.**, Caricchi L., Ulmer P., Reusser E., Mancktelow N., Burlini L. (2012). *Rheology of three-phase magmas*. VMSG 2012 (Bristol, United Kingdom) [#]

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66. Schubert M., Driesner T., Ulmer P., **Pistone M.** (2012). *Modeling magma chamber dynamics with complex rheological properties*. GeoMod 2012 (Lausanne, Switzerland) [#]

67. Fife J.L., **Pistone M.**, Mader K., Rappaz M., Stampanoni M. (2012). *In-situ investigations of the interface dynamics of materials using ultra-fast X-ray tomographic microscopy and laser heating*. First International Conference on 3D Materials Science (Pittsburgh, USA) [@]

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73. Ulmer P., **Pistone M.**, Caricchi L., Fife J.L., Marone F., Benson P.M., Almqvist B.S.G., Reusser E., Rust A., Burlini L. (2011). *In-Situ Ultrafast 3D Imaging of Magma Vesiculation at High Temperature*. AGU Fall Meeting 2011 (San Francisco, USA) [@]

74. **Pistone M.**, Caricchi L., Ulmer P., Mancktelow N., Reusser E., Burlini L. (2011). *Rheology of Volatile-rich Crystal Mush*. 9th Swiss Geosciences Meeting (Zurich, Switzerland) [#]

75. **Pistone M.**, Ulmer P., Caricchi L., Fife J.L., Marone F., Benson P.M., Almqvist B.S.G., Reusser E., Rust A., Burlini L. (2011). *In-Situ Ultrafast 3D Imaging of Magma Vesiculation at High Temperature*. JUM@P'11 (Villigen, Switzerland) [@]

76. **Pistone M.**, Caricchi L., Ulmer P., Reusser E., Marone F., Burlini L. (2011). *Rheology of Three-Phase Magmas*. EGU Spring Meeting 2011 (Vienna, Austria) [#]

77. **Pistone M.**, Caricchi L., Ulmer P., Reusser E., Marone F., Burlini L. (2011). *The Rheology of Three-Phase Magmas*. Journée Magmatique XIV (Geneve, Switzerland) [#]

78. Cordonnier B., Caricchi L., **Pistone M.**, Castro J., Hess K.-U., Dingwell D.B. (2010). *Rheology of pure glasses and crystal-bearing melts: from the Newtonian field to the brittle onset*. AGU Fall Meeting 2010 (San Francisco, USA) [@]

79. **Pistone M.**, Caricchi L., Ulmer P., Reusser E., Marone F., Burlini L. (2010). *The Non-Newtonian Rheology of Real Magmas: insights into 3D microstructures*. AGU Fall Meeting 2010 (San Francisco, USA) [@]

80. **Pistone M.**, Caricchi L., Ulmer P., Reusser E., Marone F., Burlini L. (2010). *The brittle/ductile transition in 3-phase felsic magmas*. 6th EURISPET (Zurich, Switzerland) [@]

81. **Pistone M.**, Caricchi L., Ulmer P., Burlini L. (2010). *Large strain experiments on crystal- and bubble-bearing silicic magmas: a complex rheology*. EGU Spring Meeting 2010 (Vienna, Austria) [#]

82. **Pistone M.**, Caricchi L., Ulmer P., Burlini L. (2010). *The brittle-ductile transition in crystal- and bubble-bearing felsic magmas*. EGU Spring Meeting 2010 (Vienna, Austria) [@]

83. **Pistone M.**, Caricchi L., Ulmer P., Burlini L. (2010). *Large strain experiments on crystal- and bubble-bearing felsic magmas*. EMPG XIII (Toulouse, France) [#]

84. **Pistone M.**, Caricchi L., Ulmer P., Burlini L. (2010). *The brittle-ductile transition in crystal- and bubble-bearing magmas*. EMPG XIII (Toulouse, France) [@]

85. **Pistone M.**, Caricchi L., Ulmer P., Burlini L. (2010) *The Complex Rheology of Magmas: An Experimental Study*. EPFL First Doctoral Conference in Mechanics (Lausanne, Switzerland) [#]

86. **Pistone M.**, Caricchi L., Ulmer P., Burlini L. (2010) *Large strain experiments on crystal- and bubble-bearing silicic magmas*. Microstructures and Physico-Chemical Properties of Earth and Planetary Materials (Verbania-Pallanza, Italy) [@]

87. **Pistone M.**, Caricchi L., Ulmer P., Burlini L. (2010). *The brittle-ductile transition in crystal- and bubble-bearing silicic magmas*. Microstructures and Physico-Chemical Properties of Earth and Planetary Materials (Verbania-Pallanza, Italy) [@]

88. **Pistone M.**, Caricchi L., Ulmer P., Burlini L. (2010). *Large strain experiments on crystal- and bubble-bearing silicic magmas*. Rheology and Physical Properties of Magmas: Controls on Dynamics of Magma Transport, Storage and Eruption (Zurich, Switzerland) [@]

89. **Pistone M.**, Caricchi L., Ulmer P., Burlini L. (2010). *The brittle-ductile transition in crystal- and bubble-bearing silicic magmas*. Rheology and Physical Properties of Magmas: Controls on Dynamics of Magma Transport, Storage and Eruption (Zurich, Switzerland) [@]

90. **Pistone M.**, Caricchi L., Ulmer P., Burlini L. (2010). *Large strain experiments on crystal- and bubble-bearing silicic magmas*. Journée Magmatique XIII (Bern, Switzerland) [#]

91. **Pistone M.**, Caricchi L., Burlini L., Ulmer P. (2009) *Large strain experiments on crystal- and bubble-bearing silicic magmas*. AGU Fall Meeting 2009 (San Francisco, USA) [@]

92. **Pistone M.**, Caricchi L., Burlini L., Ulmer P. (2009). *Rheological properties of crystal- and bubble-bearing silicic magmas: Preliminary experimental data*. 7th Swiss Geosciences Meeting (Neuchatel, Switzerland) [@]

93. **Pistone M.**, Caricchi L., Burlini L., Ulmer P. (2009). *Rheological properties of crystal- and bubble-bearing silicic magmas: Preliminary experimental data*. Rittmann Conference (Nicolosi, Italy) [#]

94. Masotta M., **Pistone M.**, Trigila R. (2007). *La determinazione di P, T, X_i^M per la definizione dimensionale delle camere magmatiche a partire dai prodotti eruttati: il caso dell'eruzione di Monte Nuovo (Campi Flegrei) nel 1538.* 25th GNGTS (Roma, Italy) [#]

Experimental, analytical, and computational experience

Experimental Facilities:
HT-HP Paterson-type rock deformation apparatus; HIP large capacity apparatus; Permeameter; HT Muffle; End-Loaded Piston-Cylinder; Cold-seal Vessel; TZM and HMC vessel.

Analytical Facilities:
EPMA; FEG-EPMA; SEM; FEG-SEM; STEM; SIMS; Mössbauer Spectroscopy; XRF; XRD; KFT; CO_2-Coulometry; FTIR; Raman Spectroscopy; micro-XANES; synchrotron X-ray microtomography and laser *and* induction heating systems for in-situ, time-resolved HT experiments; neutron tomography.

Computational Codes:
Operative Systems: Windows; Macintosh; Linux. Public domain software: ImageJ; JMicroVision; ParaView; Blob3D; Quant3D; Perple_X; MELTS. Other codes: MATLAB; Avizo® Fire; Adobe.

Fieldwork experience

2022 Mt Etna, Italy: fall-out tephra and lava flow deposits

Chimborazo volcano, Ecuador: fall-out, surge, and pyroclastic flow deposits

Ivrea-Verbano Zone (Italy): ore deposits from lower to middle crust

2021 Graves Mountain, Georgia: metavolcanics, rutile and kyanite mine

Ivrea-Verbano Zone (Italy): lower to middle crust and mantle rocks

2020 Stone Mountain, Arabia Mountain, Georgian Appalachians: granites, gneisses, migmatites

2018 Sondalo and Val Malenco (Italy): lower to middle crust and mantle rocks, serpentinization

2017 Ivrea-Verbano Zone (Italy): lower to middle crust and mantle rocks

Cascade volcanoes (OR and WA, US): andesite to dacite volcanoes (Mt St Helens, Mt Hood,

Newberry, Crater Lake), large igneous province of Columbia River

2015 Western Aleutians (AK, US): tholeiitic and calc-alkaline volcanic tephra and lava rocks

St Leonhard (Austria): mid-crustal granulites and eclogites

2013 Guernsey (Channel Islands): granite and diorite mixing and mingling

Cornwall (United Kingdom): porphyry ore deposits

2012 Torres del Paine (Chile) and Fitz Roy (Argentina): pluton mechanics and contact aureole

Lipari, Aeolian Islands (Italy): Rocche Rosse obsidian lava flow

2010 Mono Crater, Onion Valley, Sawmill Creek, Big and Little Glass Mountain, Mount Shasta, Sierra Nevada (CA, US): mid- and upper crustal granitoid plutons to silica-rich volcanic domes

2009 Tenerife and La Palma, Canary Islands (Spain): caldera-forming ignimbrite and lava flow deposits

Adamello Massif (Italy): pluton emplacement, magma mingling, and contact aureole

2007 Somma-Vesuvius (Italy): fallout pumice deposits of Avellino Plinian Eruption

Monte Nuovo, Phlegrean Fields (Italy): phreatomagmatic to magmatic eruption style deposits