



**Present contact**

5<sup>th</sup> January 1984 (Chieti, Italy)

Italian citizen / EU citizen / US Green Card

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Citation metrics:

Google Scholar: 1070 citations, h-index: 17, i10-index: 19

Mendeley (ID: 54780522600): 882 citations, h-index: 15

Web of Science ResearcherID (ID: Q-6142-2018): 778 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

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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 Kingdom, 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

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### 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 Cluster - Natural Hazards and Critical Metals: Geology as the Answer to Climate Crisis and Geopolitical Concerns

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 Parcels (*Petrological, geochemical, and geochronological analysis of tephra from Plinian eruption of Chimborazo volcano*) [University of Georgia, US]

2022-23 Jeremiah Funke (*Magmatic sulphide systems in the deep crust of the Ivrea-Verbano Zone, Italy*) [University of Georgia, US]

2022-23 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:*

2021-23 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

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- Member of the Scientific Committee of the 16<sup>th</sup> 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).
- Review panelist for funding agencies NSF (2022) and NASA (2023).
- 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 (1<sup>st</sup>–4<sup>th</sup> May 2017)
- Organiser of the scientific meeting “Journée Petrologique Magmatique” in Lausanne, Switzerland (18<sup>th</sup> January 2019)
- Seminar organiser at the School of Earth Sciences, University of Bristol, United Kingdom (2013-2014)

## Professional memberships

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

## Engagement in science communication and outreach

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2023 Article on *Fase 1 del progetto DIVE nella Zona Ivrea-Verbano: primo touchdown*, Società Geologica Italiana, *GeologicaMente* 12, <https://www.geologicamente.it/257/ultima-uscita.html>

*Magma Mia! Deciphering volcano behaviours in the past, present, and future*, Athens Science Café

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

2022 *Top Stories of 2022*, @UGAResearch: <https://research.uga.edu/news/top-ugaresearch-stories-of-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<sub>2</sub>, 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\\_e32o4ARH9gukR8VymlyBaV606JGqY335pIIqceT93bqv1kXrU](https://blogs.egu.eu/divisions/nh/2020/07/06/de-bello-vulcanico/?fbclid=IwAR0WDq0vq_e32o4ARH9gukR8VymlyBaV606JGqY335pIIqceT93bqv1kXrU)
- 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 Imagege on Mondays of the EGU Blogs: <https://blogs.egu.eu/geolog/2017/03/20/imagege-on-mondays-lava-highway-in-kanaga-island/>
- 2016 **Expert scientist** at Q&A 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

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- 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

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- 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)

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##### *Current Funds:*

*The excess gas paradox at volcanoes: does CO<sub>2</sub> favor gas accumulation in mafic magmas?*, National Science Foundation – Division of Earth Science – Petrology and Geochemistry [US\$ **442,241**] Role: PI

*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-Verbania 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

*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

- 2023 *The excess gas paradox at volcanoes: does CO<sub>2</sub> favor gas accumulation in mafic magmas?*, National Science Foundation – Division of Earth Science – Petrology and Geochemistry (Award #2322935) [US\$ **442,241**] Role: PI

*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

- 2022 *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<sub>2</sub> 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)**—————

2024 *MAGMA MIA! Understanding active volcanoes with modern petrology*, First-Year Odyssey Program, UGA – Franklin College of Arts & Science [US\$ 3,500] Role: PI

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

*Global Citizenship Cluster - Natural Hazards and Critical Metals: Geology as the Answer to Climate Crisis and Geopolitical Concerns*, First-Year Odyssey Program, UGA – Franklin College of Arts & Science [US\$ 3,500] 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

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#### 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<sub>2</sub> 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 microradiography and computed microtomography at Elettra: characterisation and first tests. *Journal of Synchrotron Radiation*, 25, <https://doi.org/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>

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**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:**

2024

Hetényi G, Baron L, Scarponi, M, Subedi S, Michailos K, Dal F, Gerle A, Petri B, Zwahlen J, Langone A, Greenwood A, Ziberna L, **Pistone M**, Zanetti A, Müntener O (2024) Participative gravity-modelling challenge to constrain the Balmuccia peridotite body (Ivrea-Verbano Zone, Italy). *Zenodo*, <https://zenodo.org/records/10390437>

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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#.X6QjdtCdYg>, <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, [https://www.youtube.com/watch?v=6oMMXMqXpaU&ab\\_channel=Geologi%40Ud%27A](https://www.youtube.com/watch?v=6oMMXMqXpaU&ab_channel=Geologi%40Ud%27A)
- \*\***(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*, 50<sup>th</sup> 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. Cordonnier B., **Pistone M.** (2023) *Unleashing volcanic fury or just a snooze? Exploring magma vesiculation with X-ray tomography*, AGU Fall Meeting 2023 (San Francisco, CA, US)
2. Narduzzi F., Petranich E., Pavoni E., Covelli S., **Pistone M.**, Jantzi S.C., Venier M., Černok A., Crosera M., Ziberna L., (2023) *Challenges, pitfalls, and advances in understanding the source and mobility of mercury (Hg) in a continental magmatic system*, AGU Fall Meeting 2023 (San Francisco, CA, US)
3. Ziberna L., Vernier M., Hetényi G., Müntener O., K., Greenwood A., **Pistone M.**, Zanetti A., DIVE Drilling Project Science Party (2023) *DIVE (Drilling the Ivrea-Verbano zone): Probing the lower continental crust and its transition to the mantle through scientific drilling*, Società Geologica Italiana – Società Italiana di Petrologia e Mineralogia (Potenza, Italy) [#]



4. Narduzzi F., Petranich E., Pavoni E., Covelli S., **Pistone M.**, Jantzi S.C., Venier M., Černok A., Crosera M., Ziberna L., (2023) *Investigating the distribution of mercury in the transcrustal Sesia Magmatic System (Western Alps, Italy)*, Xth Hutton Conference (Baveno, Italy) [ @ ]
5. Hulsev K.E.\* , Dutrow B., **Pistone M.**, (2023) *Fluid percolation in crystallizing felsic magmas: Insights into tourmaline analysis from Stone Mountain Granite (Georgia, USA)*, Xth Hutton Conference (Baveno, Italy) [ @ ]
6. 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> [ # ]
7. Mansouri H., Toy V., Klimm K., Bagdassarov N., **Pistone M.**, Greenwood A., Hetényi G. (2023) *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> [ @ ]
8. 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> [ # ]
9. 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) [ # ]
10. 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) [ @ ]
11. 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) [ # ]
12. **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) [ @ ]
13. 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) [ @ ]
14. 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) [ @ ]
15. 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) [ # ]

16. 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*, 15<sup>th</sup> Emile Argand Conference on Alpine Geological Studies (Ljubljana, Slovenia) <https://doi.org/10.5194/egusphere-alpshop2022-32> [#]
17. 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> [#]
18. 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> [#]
19. 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> [#]
20. **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> [#]
21. **Pistone M.** (2022) *How, How Fast, How Big will the Volcano Erupt? Lessons from Chimborazo Volcano*, 50<sup>th</sup> Anniversary of Escuela Superior Politécnica de Chimborazo International Conference (Riobamba, Ecuador) [#]
22. 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) [@]
23. **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) [#]
24. 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) [@]
25. 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) [@]
26. 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) [#]

27. **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) [ @ ]
28. **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> [ # ]
29. 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> [ # ]
30. **Pistone M.**, Caricchi L., Ulmer P. (2021) *CO<sub>2</sub> favours the accumulation of excess fluids in felsic magmas*. Goldschmidt 2021 (Lyon, France), <https://doi.org/10.7185/gold2021.8264> [ # ]
31. **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) [ # ]
32. **Pistone M.**, Caricchi L., Ulmer P. (2021) *CO<sub>2</sub> favours the accumulation of excess magmatic fluids*. EGU Spring Meeting 2021 (Vienna, Austria), <https://doi.org/10.5194/egusphere-egu21-8094> [ ç ]
33. **Pistone M.**, Caricchi L., Ulmer P. (2020) *CO<sub>2</sub> favors the accumulation of excess magmatic fluids*. AGU Fall Meeting 2020 (San Francisco, CA, US) [ # ]
34. 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) [ # ]
35. 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) [ # ]
36. 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 – 19<sup>th</sup> International Symposium (Perth, Australia) [ # ]
37. **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) [ @ ]
38. 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) [ @ ]

39. 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) [@]
40. **Pistone M.**, Caricchi L., Ulmer P. (2019). *Carbonic fluids favor excess gas accumulation and increase eruption magnitude*. DCO 2019 (Washington, DC) [@]
41. **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) [#]
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## Experimental, analytical, and computational experience

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### *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<sub>2</sub>-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<sup>®</sup> Fire; Adobe.

## Fieldwork experience

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- 2023 DIVE project at the drill site DT-1a in Megolo di Mezzo, Ivrea-Verbano Zone (Italy)  
Chimborazo volcano, Ecuador: fall-out, surge, and pyroclastic flow deposits  
Lipari, Aeolian Islands (Italy): Rocche Rosse obsidian lava flow, Lami and Mt Pilato pyroclastic fall-out deposits
- 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