



Present contact

5th January 1984 (Chieti, Italy)

Italian Citizen / EU Citizen / US Permanent Resident (Green Card Holder)

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🌐 <https://mpistonesite.wordpress.com>



Citation metrics:

Google Scholar: 1489 citations, h-index: 20, i10-index: 28

Mendeley (ID: 54780522600): 1093 citations, h-index: 17

Web of Science ResearcherID (ID: Q-6142-2018): 1001 citations, h-index: 17

Researcher ORCID: <https://orcid.org/0000-0001-7560-3146>

Associate Professor of Petrology, Geochemistry, and Volcanology, Director of MAGMA MIA research group, Advisor of 1 PhD student, 2 MS students, and 3 BS students at the University of Georgia (USA). PI (out of seven) 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 summa 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 summa 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 2025: **Associate Professor**, University of Georgia, US, in *Petrology, Geochemistry, and Volcanology**

*August 2019-July 2025: **Assistant Professor**, University of Georgia, US, in *Petrology, Geochemistry, 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-October 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

Associate Professor:

2020-pres. Undergraduate level:

GEOL 1121 Earth Processes and Environment

GEOL 4020 Internal Earth Processes

GEOL 4020L Internal Earth Processes (Petrography Laboratory)

GEOL 4300 Igneous and Metamorphic Petrology

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 6300 Igneous and Metamorphic Petrology

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 (co-teaching)

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:

2025-pres. Allison Hidalgo (*Rheology of magmas from the asthenosphere to volcanoes: experiments and modelling*) [Master; University of Georgia, US]

2025-pres. Andrea Tonato (*The excess gas paradox at volcanoes: does CO₂ favor gas accumulation in mafic magmas?*) [PhD; University of Georgia, US]

2024-pres. Kade McClain (*Filling the gaps in the Northern Andean Volcanic Zone: Integrated petrological, geochemical, and isotopic analysis of Chimborazo*) [Master; University of Georgia, US]

- 2022-24 Jackson Oakey (*Flow or blow? Understanding magma flow in conduits during vesiculation*) [Master; University of Georgia, US]
Dissertation: <https://openscholar.uga.edu/record/26676?ln=en&v=pdf>
- 2022-24 Kaitlyn Hulsey (*Building up magma reservoirs in the Earth's crust: Case of Stone Mountain*) [Master; University of Georgia, US]
Dissertation: <https://openscholar.uga.edu/record/26704?ln=en&v=pdf>
- 2022-24 Carlynn Daniel (*How are paroxysms generated at mafic volcanoes?: Insights into Mt Etna 2020-2022 eruption activity*) [Master; University of Georgia, US]
Dissertation: <https://openscholar.uga.edu/record/26691?ln=en&v=pdf>
- 2021-23 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*) [Master; University of Georgia, US]
Dissertation: <https://openscholar.uga.edu/record/2461?ln=en&v=pdf>
- 2020-22 Samuel Oxhorn (*Western Aleutian Volcanism: Defining Magmatic Series Transitions and Petrogenetic Origins*) [Master; University of Georgia, US]
Dissertation: <https://openscholar.uga.edu/record/4117?v=pdf>

Undergraduate students:

- 2025-pres. Trista Warner (*When does a dormant volcano wake up? Lessons from Mt Vulture (Italy)*) [University of Georgia, US]
- 2025-pres. Agigail Roselli Verna (*Multiphase basaltic lava rheology: A case study of Mt Etna*) [University of Georgia, US]
- 2024-pres. Alexandra Grace Lang (*Mt. Etna's Mercury and Downwind Populations*) [University of Georgia, US]
- 2023-24 Ruby Jiahui Parcels (*Did Chimborazo volcano (Ecuador) cause the Late Antique Little Ice Age or other climate changes at a regional to global scale?*) [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 Secrétan (*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:

- 2018-25 Thomas Herbst (*Degassing and outgassing of crystal-bearing dacite*) [Master/PhD; University of Missouri, Columbia, US; Advisor: A.G. Whittington]
- 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]
- 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 65 original scientific contributions (2013–present), as reported in my Publons profile: <https://publons.com/author/1417956/mattia-pistone#profile>
- Reviewer for NERC (United Kingdom), NSF (US), and ANR (France) (2014–present).
- Review Panelist for funding agencies NSF (2022) and NASA (2023-2024).
- Guest Editor of two 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, 2025), 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 (May 1–4, 2017), and main organiser of “Journée Petrologique Magmatique” meeting in Lausanne, Switzerland (January 18, 2019)
- Seminar organiser at the School of Earth Sciences, University of Bristol, United Kingdom (2013–2014) and Department of Geology, University of Georgia, US (Spring 2026)

Professional memberships

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), Atlanta Geological Society, American Chemical Society (ACS), National Center for Faculty Development and Diversity (NCFDD), National Association of Geoscience Teachers (NAGT), Sigma Xi – The Scientific Research Honor Society.

Engagement in science communication and outreach

2026 Lecture on *Volcanoes: Why Do They Matter in Our Life?*, Osher Lifelong Learning Institute, University of Georgia, US

Presentation at the Tate Center on *Magma Mia! Deciphering volcano behaviours in the past, present, and future*, First-Year Odyssey Program, Admissions Event, University of Georgia

Public dissemination for 5th-grade students at Gainesville Exploration Academy (Gainesville, GA, US) on *Magma Mia! Magmas, Volcanoes, and Eruptions*

Public dissemination for school teachers in Italy on *L'ottavo pilastro della saggezza: La missione Moho del progetto ICDP-DIVE*, Società Geologica Italiana, Il Caffè di GeologicaMente

https://www.youtube.com/watch?v=EwLmDZg_qZQ

2025 Article on *L'ottavo pilastro della saggezza: La missione Moho del progetto ICDP-DIVE*, Società Geologica Italiana, GeologicaMente 18

<https://www.geologicamente.it/282/geologicamente-numero-18.html>

Article on *Is friction melting alone sufficient to form pseudotachylytes in deep lithosphere?*, Newsletter August 2025, Atlanta Geological Society:

<https://atlantageologicalsociety.org/newsletters-2/>

Article on *The Rock Doctor: Measuring the pulse of volcanoes past and present — for the future*, @UGAResearch: <https://research.uga.edu/news/the-rock-doctor-measuring-the-pulse-of-volcanos-past-and-present-for-the-future/>

Presentation at the Tate Center on *Magma Mia! Deciphering volcano behaviours in the past, present, and future*, First-Year Odyssey Program, Admissions Event, University of Georgia

2024 Video interview in *Sharing Minds: Sampling Rocks*, National Institution of Geophysics and Volcanology of Italy (INGV) as part of the Monitoring Earth's Evolution and Tectonics (MEET), sponsored by Transnational Access (TNA) and National Open Access (NOA) scheme of the Next Generation of European Fund, Integrated Laboratories for Geoscience and Environment (ILGE), Italian National Recovery and Resilience Plan (PNRR)

<https://ilge.ct.ingv.it/SHARING%20MINDS1.mov>

<https://youtu.be/9HWu2ZEGooE?si=O2FGZlQta0ZlhA7k>

Article on *Ivrea-Verbano, Fase 1 del Progetto DIVE: un tuffo nelle radici della crosta continentale*, Società Geologica Italiana, GeologicaMente 14

<https://www.geologicamente.it/276/geologicamente-numero-14.html>

Presentation at the Tate Center on *Magma Mia! Deciphering volcano behaviours in the past, present, and future*, First-Year Odyssey Program, Admissions Event, University of Georgia

- 2023 Article on *Fase 1 del progetto DIVE nella Zona Ivrea-Verbano: primo touchdown*, Società Geologica Italiana, *GeologicaMente* 12
<https://www.geologicamente.it/274/geologicamente-numero-12.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://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 CO₂, 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=IwAR0WDq0vqe32o4ARH9gukR8VymlyBaV606JGqY335pIIqceT93bqv1kXrU>
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

- 2025 Community Research Prioritization for Volcanoes across the Alaska-Aleutian Arc Workshop (National Science Foundation)
- 2023 Teaching Petrology Workshop (National Science Foundation)
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 (Zürich, Switzerland)
- 2009-13 4D-Adamello Pro-School (Swiss National Science Foundation)

Awards

- 2025 2026-2028 Sigma Xi, The Scientific Research Honor Society, Distinguished Lecturer
- 2024 2024-2025 Geological Society of America – Continental Scientific Drilling Distinguished Lecturer
Student Career Success Influencer Award 2024
- 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
Student Career Success Influencer Award 2021
- 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 CO₂ favor gas accumulation in mafic magmas?, National Science Foundation – Division of Earth Science – Petrology and Geochemistry (Award #2322935) [US\$ **442,241**] Role: PI

Critical minerals vs. energy independence: Resolving the conundrum via phytomining of metals, Multidisciplinary Seed Grant of the Rapid Interdisciplinary Proposals Program, University of Georgia, US [US\$ 10,000] Role: PI

Mt Vulture volcano (Italy): Insights into the reawakening of a volcanic “Sleeping Beauty”, Office of Research and Office of Global Engagement, University of Georgia, US [US\$ 15,000] Role: PI

Powering the high-temperature and high-pressure capabilities of MAGMA MIA Lab, Research Intensification System, Franklin College of Arts & Sciences, University of Georgia, US [US\$ 12,000] Role: PI

SAKURA - From Mantle Flow to Magma Migration: A Multiscale Investigation of Lithospheric-Asthenospheric Coupling, Earth Telescope Research Programme of the National Institute of Geophysics and Volcanology of Italy and Ministry of University and Research of Italy [€ **2,000,000**] Role: co-PI (sole PI not based in an Italian institution)

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

2026 *Critical minerals vs. energy independence: Resolving the conundrum via phytomining of metals*, Multidisciplinary Seed Grant of the Rapid Interdisciplinary Proposals Program, University of Georgia, US [US\$ 10,000] Role: PI

Mt Vulture volcano (Italy): Insights into the reawakening of a volcanic “Sleeping Beauty”
Office of Research and Office of Global Engagement, University of Georgia, US [US\$ 15,000]
Role: PI

Powering the high-temperature and high-pressure capabilities of MAGMA MIA Lab, Research Intensification System, Franklin College of Arts & Sciences, University of Georgia, US [US\$ 12,000] Role: PI

2025 *SAKURA - From Mantle Flow to Magma Migration: A Multiscale Investigation of Lithospheric-Asthenospheric Coupling*, Earth Telescope Research Programme of the National Institute of Geophysics and Volcanology of Italy and Ministry of University and Research of Italy [€ **2,000,000**] Role: co-PI (sole PI not based in an Italian institution)

2024 *CLIMAX: Was Chimborazo volcano (Ecuador) the climate modulator leading to the Antonine Plague in the Roman Empire during the second century AD?*, Teaming for Interdisciplinary Research Pre-Seed Program, University of Georgia [US\$ 4,250] Role: PI

- 2023 *The excess gas paradox at volcanoes: does CO₂ 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 7
- 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: CO₂ 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) _____

- 2026 *Journey into the Earth's interior: exploring the origin, architecture, and dynamics of continents*, First-Year Odyssey Program, UGA – Franklin College of Arts & Sciences [US\$ 3,500] Role: PI
- 2025 *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 & Sciences [US\$ 3,500] Role: PI
- MAGMA MIA! Understanding active volcanoes with modern petrology*, First-Year Odyssey Program, UGA – Franklin College of Arts & Sciences [US\$ 3,500] Role: PI
- 2024 *4D PETROLAB: The Art of Grinding and Polishing Geomaterials*, Teaching Enhancement and Innovation Fund [US\$ 3,000] 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 & Sciences [US\$ 3,500] Role: PI

- MAGMA MIA! Understanding active volcanoes with modern petrology*, First-Year Odyssey Program, UGA – Franklin College of Arts & Sciences [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 & Sciences [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 & Sciences [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 & Sciences [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:

2026

- Narduzzi F, Covelli S, **Pistone M**, Pitcairn I, Tribuzio R, Zibera L (2026) Negligible recycling of Hg into the Earth's mantle?. *Geochemical Perspective Letters*, 4I: 12-17, <https://doi.org/10.7185/geochemlet.2626>

2025

Pistone M, Toy VG, Ofman MW, Formo E, Robyr M (2025) Can pseudotachylytes form via fracture-induced decompression melting under hydrous conditions?. *Tektonika*, 3, 58-80, <https://doi.org/10.55575/tektonika2025.3.2.64>

Narduzzi F, Covelli S, Floreani F, Pavoni E, Petranich E, Jantzi SC, **Pistone M**, Černok A, Venier M, Crosera M, Ziberna L (2025) Strengths and weaknesses of the analytical techniques used for measuring low mercury concentrations ($< 10 \text{ ng g}^{-1}$) in crystalline rocks: Direct Mercury Analyzer versus Cold-Vapour-Atomic-Fluorescence-Spectroscopy. *Geostandards and Geoanalytical Research*, 49: 295-314, <https://doi.org/10.1111/ggr.12606>

2024

Ryan AG, Hansen LN, Dillman A, **Pistone M**, Zimmerman ME, Williams SA (2024) Shear-induced dilation and dike formation during mush deformation. *Earth and Planetary Science Letters*, 651, <https://doi.org/10.1016/j.epsl.2024.119164>

Li J, Caspari E, Greenwood A, Pierdominici S, Lemke K, Venier M, Kück J, Baron L, **Pistone M**, Petri B, Ziberna L, Hetényi G (2024) Integrated rock mass characterization of the lower continental crust along the ICDP-DIVE 5071_1_B borehole in the Ivrea-Verbano Zone. *Geochemistry, Geophysics, Geosystems*, 25, e2024GC011707, <https://doi.org/10.1029/2024GC011707>

Herbst T, Whittington AG, **Pistone M**, Schiffbauer JD, Selly T (2024) Release the cracking: Controls on gas retention in crystal-rich magmas. *Bulletin of Volcanology*, 86, <https://doi.org/10.1007/s00445-024-01747-3>

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) Report on an open dataset to constrain the Balmuccia peridotite body (Ivrea-Verbano Zone, Italy) through a participative gravity-modelling challenge. *Swiss Journal of Geoscience*, 117, <https://doi.org/10.1186/s00015-023-00450-3>

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.org/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>

Pistone M, Caricchi L, Ulmer P (2021) CO₂ favors the accumulation of excess fluids in felsic magmas. *Terra Nova*, 2020;00:1-9, <https://doi.org/10.1111/ter.12496>

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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>

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>

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>

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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, H₂O 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>

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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.org/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. *Bulletin of Volcanology*, 77, <https://doi.org/10.1007/s00445-015-0992-1>

Pistone M, Caricchi L, Cordonnier B, Ulmer P, Marone F (2015) The viscous to brittle transition in bubble- and crystal-bearing magmas. *Frontiers in Earth Sciences*, 3, <https://doi.org/10.3389/feart.2015.00071>

Pistone M, Arzilli F, Dobson KJ, Cordonnier B, Reusser E, Ulmer P, Marone F, Whittington AG, Mancini L, Fife JL, Blundy JD (2015) Gas-driven filter pressing in magmas: insights into in situ melt segregation from crystal mushes. *Geology*, 43, 699-702, <https://doi.org/10.1130/G36766.1>

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Pistone M, Caricchi L, Ulmer P, Reusser E, Ardia P (2013) Rheology of volatile-bearing crystal mushes: mobilization vs. viscous death. *Chemical Geology*, 345, 16-39, <https://doi.org/10.1016/j.chemgeo.2013.02.007>

Madonna C, Quintal B, Frehner M, Almqvist BSG, Tisato N, **Pistone M**, Marone F, Saenger E (2013) Synchrotron-based X-ray tomographic microscopy for rock microstructure investigations, *Geophysics*, 78, D53-D64, <https://doi.org/10.1190/geo2012-0113.1>

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Pistone M, Caricchi L, Ulmer P, Burlini L, Ardia P, Reusser E, Marone F, Arbaret L (2012) Deformation experiments of bubble- and crystal-bearing magmas: rheological and microstructural analysis. *Journal of Geophysical Research*, 117, <https://doi.org/10.1029/2011JB008986>

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.org/10.1107/S0909049512003287> [This study on journal volume cover]

2011

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.org/10.1007/s00445-011-0471-2>

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

2025

** Okumura S, Bain AA, Chevrel MO, Kendrick JE, Llewellyn EW, **Pistone M**, Vona A, Whittington AG (2025) Chapter 2.3 Physical properties of magmas and their evolution during storage, transport, eruption and emplacement – PART 1: Tectonics and plumbing systems. In Caricchi L, Bonadonna C, Packowska A, Clarke A, Lowenstern J (eds) *Encyclopaedia of Volcanoes*, 3rd edition, Elsevier, <https://doi.org/10.31223/X5ST63>

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.org/10.3389/feart.2020.611295>

* **Pistone M**, Taisne B, Dobson K, eds. (2020) Volumes, Timescales, and Frequency of Magmatic Processes in the Earth's Lithosphere – Part I and II. *Frontiers in Earth Science*, Lausanne: Frontiers Media SA, <https://doi.org/10.3389/978-2-88963-777-5>

*** **Pistone M**, Taisne B, Dobson KJ (2020) Editorial: Volumes, Timescales, and Frequency of Magmatic Processes in the Earth's Lithosphere. *Frontiers in Earth Science*, 8, 118, <https://doi.org/10.3389/feart.2020.00118>

Data Repositories:

2026

Tonato A, Andronico D, Corsaro RA, Caruso S, **Pistone M**, Cristaldi A (2026) CAMSIZER Particle Size Data from Explosive Paroxysms of Mt. Etna (2011–2025): GFZ Data Services. <https://doi.org/10.5880/fidgeo.2026.037>

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Pistone M, Lang AG, Andronico D (2025) CAMSIZER Data from the Sedimentology and Optical Microscopy Laboratory of the INGV Observatory of Mt. Etna. GFZ Data Services. <https://doi.org/10.5880/fidgeo.2025.085>

Pistone M, Toy VG, Ofman MW, Formo E, Robyr M (2025) Supplementary materials associated to the peer-reviewed contribution on "Can pseudotachylytes form via fracture-induced decompression melting under hydrous conditions?", published in *Tektonika*. *Zenodo*, <https://doi.org/10.5281/zenodo.16884827>

Narduzzi F, Covelli S, Floreani F, Pavoni E, Petranich E, Jantzi SC, **Pistone M**, Černok A, Venier M, Crosera M, Zibera L (2025) Supplementary figures and geochemical dataset supporting the manuscript on “Strengths and weaknesses of the analytical techniques used for measuring low mercury concentrations ($< 10 \text{ ng g}^{-1}$) in crystalline rocks: Direct Mercury Analyzer versus Cold-Vapour-Atomic-Fluorescence-Spectroscopy”. *Zenodo*, <https://doi.org/10.5281/zenodo.14577500>

2024

Ryan AG, Hansen LN, Dillman A, **Pistone M**, Zimmerman ME, Williams SA (2024) Data for “Shear-induced dilation and dike formation during mush deformation” published in *Earth and Planetary Science Letters*. *Mendeley Data*, V1, <https://data.mendeley.com/datasets/tw3bbz62ws/1>

Oxhorn SB, **Pistone M** (2024) Gareloi and Kiska bulk whole-rock multielement data, version 1.0 *Interdisciplinary Earth Data Alliance (IEDA)*, <https://doi.org/10.60520/IEDA/113272>

Hetényi G, Baron L, Scarponi, M, Subedi S, Michailos K, Dal F, Gerle A, Petri B, Zwahlen J, Langone A, Greenwood A, Zibera 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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Pistone M, Fife JL, Tisato N, Caricchi L, Reusser E, Ulmer P, Mader K, Marone F (2021) Tomographic data from GRL paper on "Seismic attenuation during magma vesiculation: A combination of laboratory constraints and modeling". *Paul Scherrer Institut*, <https://doi.org/10.16907/a672b15a-9973-4d92-bf1e-3488cdfb4d1b>

Pistone M, Fife JL, Tisato N, Caricchi L, Reusser E, Ulmer P, Mader K, Marone F (2021) Table 1 from GRL paper on "Seismic attenuation during magma vesiculation: A combination of laboratory constraints and modeling". *Zenodo*, https://zenodo.org/record/4651226#.YGYtsGiQi_t

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>

Reports:

2025

Greenwood A, Venier M, Hetényi G, Ziberna L, Heeschen K, Pacchiera L, Lemke K, Dutoit H, Bonazzi M, Degen S, Li J, Secrétan A, Trabi B, Tholen S, Lefevre N, Auclair S, Mariani D, Del Rio M, Černok A, Bhattacharyya A, Narduzzi F, Mansouri H, Urueña C, Beltrame M, Hawemann F, Velicogna M, Toy V, Dominique J, Longo A, Toniatti L, Barosa B, Brusca J, Nappi N, Gallo G, Esposito M, Diana SC, Bastianoni A, Eckert EM, Confal JM, Pondrelli S, Piana Agostinetti N, Tertyshnikov K, Caspari E, Truche L, Wiersberg T, Baron L, Giovannelli D, **Pistone M**, Zanetti A, Müntener O (2025) Drilling the Ivrea-Verbano zone: DIVE 1 – ICDP Operational Report. *Potsdam: GFZ Data Services*, pp. 109, <https://doi:10.48440/ICDP.5071.001>

White Papers:

2024

Myers M, Masterlark T, Abers G, Bizimis M, Black B, Clarke A, DePaolo D, Eddy MP, Eichelberger J, Finlayson V, Fischer T, Jackson M, Konrad K, Lowenstern J, **Pistone M**, Poland M, Schmandt B, (2024) Magmatic Systems Science Planning for Continental Drilling and Coring 2024. White paper for the National Science Foundation.

Invited seminar (*), webinar (), and Distinguished Lecture (***)** _____

*(June 2026) *How much gas can be retained in magmas prior to eruptions? Insights from field and laboratory measurements*, Department of Physics and Department of Biological, Geological, and Environmental Sciences, University of Bologna, Italy.

*(March 2026) *How much gas can be retained in magmas prior to eruptions? Insights from field and laboratory measurements*, School of the Earth, Ocean and Environment, University of South Carolina, US.

*(March 2026) *Exploring gas accumulation in magmas: Bridging the gap between field and laboratory measurements*, Jackson School of Geosciences, Department of Earth and Planetary Sciences, University of Texas at Austin, US.

*(February 2026) *Mt Etna (Italy): A natural laboratory to apply transdisciplinary research on the physics of gas accumulation, level of eruption intensity, and risks linked to metal dispersion*, School of Earth and Atmospheric Sciences, College of Sciences, Georgia Institute of Technology, US.

- **(February 2026) *Magmas, volcanoes, and asthenosphere-lithosphere structures along the 41° latitude: laboratory analyses, experiments, and modelling*, Istituto Nazionale di Geofisica e Vulcanologia, Rome, Italy.
- *(December 2025) *Moho Mission to the Foundation of Continents: The ICDP DIVE Drilling Project*, Continental Scientific Drilling and International Continental Scientific Drilling Program Town Hall, 2026 AGU Fall Meeting, New Orleans, US.
- *(November 2025) *Moho Mission to the Foundation of Continents: The ICDP DIVE Drilling Project*, Department of Earth and Environmental Sciences, University of Pennsylvania, US.
- *(October 2025) *Living under the shadow of active volcanoes: Lessons from three cases in Italy*, Department of Geography, University of Georgia, US.
- *(October 2025) *Petrology and Volcanology of Chimborazo*, 2025 Semana de la Ciencia y Tecnología (SECTEI), University of Georgia, US.
- *(September 2025) *Magma Mia! Studying volcanoes to assess hazards and resources*, Morehead Honors College, University of Georgia, US.
- *** (June 2025) *Moho Mission to the Foundation of Continents: The ICDP DIVE Drilling Project*, Geological Society of America – Continental Scientific Drilling Distinguished Lecture, Scripps Institution of Oceanography, University of California in San Diego, US.
- *(May 2025) *Database: Whole rock data for the Western Aleutians*, Community Research Prioritization for Volcanoes across the Alaska-Aleutian Arc Workshop – National Science Foundation, University of Alaska in Anchorage, US.
- *** (May 2025) *Moho Mission to the Foundation of Continents: The ICDP DIVE Drilling Project*, Geological Society of America – Continental Scientific Drilling Distinguished Lecture, Lamont Doherty Observatory, Columbia University, US.
- *** (April 2025) *Moho Mission to the Foundation of Continents: The ICDP DIVE Drilling Project*, Geological Society of America – Continental Scientific Drilling Distinguished Lecture, School of Sustainability, Stanford University, US.
- *** (April 2025) *Moho Mission to the Foundation of Continents: The ICDP DIVE Drilling Project*, Geological Society of America – Continental Scientific Drilling Distinguished Lecture, United States Geological Survey in NASA Ames Research Park, US.
- *** (April 2025) *Moho Mission to the Foundation of Continents: The ICDP DIVE Drilling Project*, Geological Society of America – Continental Scientific Drilling Distinguished Lecture, Department of Geosciences, University of Alaska Fairbanks, US.
- *** (April 2025) *Moho Mission to the Foundation of Continents: The ICDP DIVE Drilling Project*, Geological Society of America – Continental Scientific Drilling Distinguished Lecture, Department of Geosciences, University of Arizona, US.
- *** (March 2025) *Moho Mission to the Foundation of Continents: The ICDP DIVE Drilling Project*, Geological Society of America – Continental Scientific Drilling Distinguished Lecture, Department of Geology and Geophysics, University of Utah, US.

- *** (March 2025) *Moho Mission to the Foundation of Continents: The ICDP DIVE Drilling Project*, Geological Society of America – Continental Scientific Drilling Distinguished Lecture, School of Earth, Environment and Sustainability, Georgia Southern University, US.
- *** (March 2025) *Moho Mission to the Foundation of Continents: The ICDP DIVE Drilling Project*, Geological Society of America – Continental Scientific Drilling Distinguished Lecture, Department of Geological Sciences and Engineering, University of Nevada in Reno, US.
- *** (February 2025) *Moho Mission to the Foundation of Continents: The ICDP DIVE Drilling Project*, Geological Society of America – Continental Scientific Drilling Distinguished Lecture, Department of Earth and Planetary Sciences, University of Texas in San Antonio, US.
- *** (February 2025) *Moho Mission to the Foundation of Continents: The ICDP DIVE Drilling Project*, Geological Society of America – Continental Scientific Drilling Distinguished Lecture, Department of Geological Sciences, University of Missouri, US.
- *** (January 2025) *Moho Mission to the Foundation of Continents: The ICDP DIVE Drilling Project*, Geological Society of America – Continental Scientific Drilling Distinguished Lecture, Department of Geology, University of Georgia, US.
- *** (December 2024) *Moho Mission to the Foundation of Continents: The ICDP DIVE Drilling Project*, Geological Society of America – Continental Scientific Drilling Distinguished Lecture, Department of Earth Sciences, University of Rome La Sapienza, Italy.
- *** (December 2024) *Moho Mission to the Foundation of Continents: The ICDP DIVE Drilling Project*, Geological Society of America – Continental Scientific Drilling Distinguished Lecture, School of Earth, Environment and Sustainability, Missouri State University, US.
- ** (November 2024) *Moho Mission to the Foundation of Continents: The ICDP DIVE Drilling Project*, Geological Society of America – Continental Scientific Drilling Distinguished Lecture, Department of Earth and Environmental Sciences, University of Ottawa, Department of Earth Sciences, Carleton University, Geological Survey of Canada, Canada.
- *** (October 2024) *Moho Mission to the Foundation of Continents: The ICDP DIVE Drilling Project*, Geological Society of America – Continental Scientific Drilling Distinguished Lecture, Department of Geological Sciences, University of Florida, US.
- * (October 2024) *Does CO₂ increase the level of gas accumulation in magmas prior to eruptions? Lessons from Mt Etna (Italy)*, Department of Geological Sciences, University of Florida, US.
- *** (October 2024) *Moho Mission to the Foundation of Continents: The ICDP DIVE Drilling Project*, Geological Society of America – Continental Scientific Drilling Distinguished Lecture, Department of Earth and Space Sciences, West Chester University, US.
- *** (October 2024) *Moho Mission to the Foundation of Continents: The ICDP DIVE Drilling Project*, Geological Society of America – Continental Scientific Drilling Distinguished Lecture, Department of Earth and Environmental Sciences, Western Michigan University, US.
- ** (October 2024) *Moho Mission to the Foundation of Continents: The ICDP DIVE Drilling Project*, Geological Society of America – Continental Scientific Drilling Distinguished Lecture, Department of Atmospheric, Oceanic & Earth Sciences, George Mason University, US.

- *(August 2024) *How to Decipher Eruptive Dynamics and Impact using Rocks, Heavy Metals, and Pop Volcanoes*, Savannah Research Ecology Laboratory, University of Georgia, US.
- ** (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 Chieti-Pescara, Italy, 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*, 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.
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70. **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) [#]
71. Müntener O., **Pistone M.** (2019). *Bulk crustal composition and modulations by magmatic additions*. EGU Spring Meeting 2019 (Vienna, Austria) [#]
72. 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) [@]
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74. **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) [@]

75. 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) [a]
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81. Whittington A.G., Herbst T., **Pistone M.**, Schiffbauer J., Selly T. (2018). *Experimental vesiculation and outgassing of crystal-bearing dacite*. CoV 2018 (Naples, Italy) [#]
82. 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) [a]
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85. **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) [#]
86. 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) [#]
87. **Pistone M.** (2017). *Chemical and physical aspects of fluid extraction from the Earth's crust*. DCO Early Career Scientist Workshop 2017 (Catania, Italy) [#]

88. **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) [#]
89. **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) [#]
90. **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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92. **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) [@]
93. **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) [@]
94. 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) [#]
95. **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) [#]
96. **Pistone M.**, Caricchi L., Ulmer P. (2013). *Rheology of crystal- and bubble-bearing magmas: insights into the volcanic conduit dynamics*. IAVCEI 2013 (Kagoshima, Japan) [#]
97. **Pistone M.**, Caricchi L., Ulmer P. (2013). *Rheology of crystal- and bubble-bearing magmas: insights into the volcanic conduit dynamics*. EGU Spring Meeting 2013 (Vienna, Austria) [#]
98. **Pistone M.**, Caricchi L., Ulmer P., Reusser E., Mancktelow N., Burlini L. (2012). *Rheology of three-phase magmas*. VMSG 2012 (Bristol, United Kingdom) [#]
99. **Pistone M.**, Caricchi L., Ulmer P., Reusser E., Mancktelow N., Burlini L. (2012). *Rheology of Volatile-rich Crystal Mush: Mobilization vs. Viscous Death*. Adamello Conference (Bagolino, Italy) [@]
100. Schubert M., Driesner T., Ulmer P., **Pistone M.** (2012). *Modeling magma chamber dynamics with complex rheological properties*. GeoMod 2012 (Lausanne, Switzerland) [#]
101. 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) [@]
102. **Pistone M.**, Caricchi L., Ulmer P., Reusser E., Mancktelow N., Burlini L. (2012). *Rheology of Volatile-rich Crystal Mush*. EGU Spring Meeting 2012 (Vienna, Austria) [#]
103. **Pistone M.**, Caricchi L., Ulmer P., Reusser E., Marone F., Burlini L. (2012). *Rheology of Three-Phase Magmas*. EGU Spring Meeting 2012 (Vienna, Austria) [#]

104. Cordonnier B., Kaus B., Manga M., Caricchi L., **Pistone M.**, Castro J., Hess K.-U., Gottschaller S., Dingwell D.B., Burlini L. (2012). *Brittle onset of monodispersed magmatic suspensions: from spheres to spheroid*. EGU Spring Meeting 2012 (Vienna, Austria) [#]
105. **Pistone M.**, Caricchi L., Ulmer P., Reusser E., Marone F., Burlini L. (2011). *Rheology of Three-Phase Magmas*. AGU Fall Meeting 2011 (San Francisco, USA) [#]
106. Caricchi L., **Pistone M.**, Cordonnier B., Ulmer P., Tripoli B., Reusser E., Marone F., Burlini L. (2011). *The Brittle-Ductile Transition in Crystal- and Bubble-bearing Magmas*. AGU Fall Meeting 2011 (San Francisco, USA). [@]
107. 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) [@]
108. **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) [#]
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111. **Pistone M.**, Caricchi L., Ulmer P., Reusser E., Marone F., Burlini L. (2011). *The Rheology of Three-Phase Magmas*. Journée Magmatique XIV (Geneve, Switzerland) [#]
112. 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) [@]
113. **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) [@]
114. **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) [@]
115. **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) [#]
116. **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) [@]
117. **Pistone M.**, Caricchi L., Ulmer P., Burlini L. (2010). *Large strain experiments on crystal- and bubble-bearing felsic magmas*. EMPG XIII (Toulouse, France) [#]
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119. **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) [#]

120. **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) [@]
121. **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) [@]
122. **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) [@]
123. **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) [@]
124. **Pistone M.**, Caricchi L., Ulmer P., Burlini L. (2010). *Large strain experiments on crystal- and bubble-bearing silicic magmas*. Journée Magmatique XIII (Bern, Switzerland) [#]
125. **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) [@]
126. **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) [@]
127. **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) [#]
128. 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; CO₂-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

- 2025 Vulture, Italy: fall-out tephra and lava deposits from a variety of explosive and effusive activity
- 2024 Mt Etna, Italy: fall-out tephra from paroxysm to Plinian events and volcanic soils
- 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