

Meet the Authors



Philippe Agard is Professor of Petrology and Geodynamics at the Sorbonne University (Paris, France) and a fellow of Academia Europaea and the Institut Universitaire de France. He received his doctorate from the École normale supérieure and the Pierre and Marie Curie University (Paris). His field areas have included the European Alps, Iran, Oman, and China, and he combines metamorphic petrology and tectonics to investigate regional-scale geodynamics and processes associated with subduction, obduction and strain (de)localization. His present interest is in unravelling the former structure and rheology of the subduction plate interface, most notably in the Alps.



Matteo Alvaro is a mineral physicist and Professor of Mineralogy at the University of Pavia (Italy). He characterizes minerals and their inclusions in the deep Earth to shed light on subduction mechanisms, the depths reached by subduction, and the depth of diamond formation and growth. He combines petrology, mineral physics, and crystallography to unravel the complex geological processes that are hidden in mineral grains, from the microscopic scale down to the atomic level.



Jonathan D. Blundy is an igneous petrologist. He studied for a bachelor's degree in geology at the University of Oxford (UK) (1983) and for a PhD at the University of Cambridge (UK) (1989) on the granites of the southern Adamello Massif (Italy). Jon is interested in all things magmatic, from magma generation in the crust and mantle to active volcanoes and hydrothermal mineralisation. He approaches his research using a combination of field observations, thermodynamics, microbeam analysis, and high pressure–temperature experiments. After 31 years at the University of Bristol (UK), Jon moved to University of Oxford (UK) in July 2020 as a Royal Society Research Professor. He researches the relationship between subvolcanic processes and ore formation, with a particular emphasis on developing novel, sustainable methods for metals exploration and recovery. Jon was principal editor for petrology at *Elements* from 2018 to 2021.



Matthew Fox works on landscape evolution and geodynamics as a NERC Independent Research Fellow and a lecturer at University College London (UK). He has been studying the Alps since moving to ETH Zürich (Switzerland) in 2008. During his PhD, he worked on collecting new data from the Bergell Intrusion (Swiss Italian Alps) and interpreting the dense Alpine dataset that is the result of over four decades of thermochronometric work. Since then, he has worked on many mountain belts and in other locations with dramatic scenery, such as the Grand Canyon (USA) and the Antarctic Peninsula. Across these natural laboratories, he combines thermochronometry, landscape evolution, inverse methods, and trail running to understand Earth's dynamic surface.

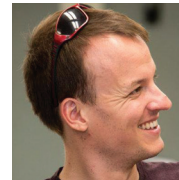


Mark R. Handy is a professor of tectonophysics at the Freie Universität Berlin (Germany) and lecturer in alpine geodynamics at the ETH Zürich (Switzerland). Since postgraduate studies at the University of Basel (PhD) and Imperial College London (UK), he has pursued research on the rheology of fault rocks and the geodynamics of mountain building. He has investigated the flow of polyphase materials and its application to lithospheric rheology. His work on the Alpine-Mediterranean chains has focused on rifting, subduction, and collision. He is a founding member of the AlpArray seismological initiative, and

he chairs the German collaborative project Mountain-Building in 4 Dimensions. His current interest is in linking mantle structure with the crustal evolution of the Alps.



Paola Manzotti is an assistant professor at Stockholm University (Sweden). After completing her PhD at the University of Bern (Switzerland) in 2012, she worked at the University of Rennes (France) for three years, then she was awarded a Swiss NSF Ambizione Fellowship at the University of Lausanne (Switzerland). Her research focuses on the mechanisms of mountain building and, especially, on the rock record of burial and exhumation cycles. She combines fieldwork, metamorphic petrology, and geochronology in order to decipher the complex evolution of subducted continental crust.



Anders McCarthy obtained his PhD from the University of Lausanne (Switzerland) in 2016. He was a postdoctoral fellow at the University of Bristol (UK) and the University of Tasmania (Australia) until 2020 and was awarded a Swiss NSF Ambizione Fellowship, which he will start at ETH Zürich in 2021. He is the recipient of the 2020 Paul Niggli Medal. He has a background in igneous petrology, geochemistry, and field geology. His research is focused on the evolution of ultra-slow mid-ocean spreading systems and the inception of subduction. He is currently working on the evolution of marginal basins in the southwest Pacific. Anders also researches the timescales of magmatic and subvolcanic processes, including the formation of vertical igneous layering in shallow plutons.



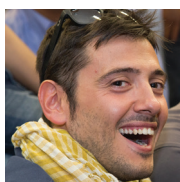
Geoffroy Mohn is, since 2012, an associate professor in tectonics at CY Cergy Paris University (France). He obtained his PhD from the University of Strasbourg (France) in 2010 followed by a postdoctoral scholarship between the University of Strasbourg, the University of Lausanne (Switzerland) and EXXONMOBIL-Upstream Research Company in Houston (Texas, USA). His research focuses on the mechanisms of continental lithospheric thinning and breakup and the associated sedimentary record by using offshore and onshore case studies. He also investigates the interaction between hyperextension and evaporite/salt deposition and the effect of mobile salt on the stratigraphic architecture of rift basins.



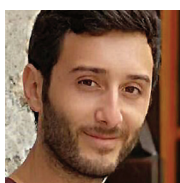
Othmar Müntener is a professor of petrology at the University of Lausanne (Switzerland). He received his PhD (1997) from ETH Zürich (Switzerland). He joined the faculty of Earth and Environmental Sciences in Lausanne in 2006, after research stays at the Massachusetts Institute of Technology (USA), Woods Hole Oceanographic Institute (USA), University of Neuchâtel (Switzerland), and University of Bern (Switzerland). He is a petrologist by training, combining field studies, geochemistry, and experimental petrology. He is interested in magmatic aspects of geological processes, from melt production in the mantle to emplacement in the crust. He conducts field work in the Alps, Patagonia, and the Himalayas, with a focus on subduction-related magmatic arcs and the evolution of continental crust and ocean–continent transitions. His current interest is in timescales of felsic plutonic systems.



Elisabetta Rampone is a professor of petrology at the Department of Earth, Environment and Life Science (DISTAV) of the University of Genoa (Italy). She previously worked as a researcher and associate professor at the Universities of Milano Statale and Milano-Bicocca (1996–2001). She obtained her PhD from the University of Genoa and developed part of her PhD project at the Max Planck Institute for Chemistry in Mainz (Germany). She is Editor in Chief of the *European Journal of Mineralogy and Petrology*. Her scientific interests focus on the petrology and geochemistry of mantle peridotites and ophiolites. This field-based research addresses the mechanisms of magma production, melt percolation and melt–peridotite interaction in the oceanic mantle, and the building and evolution of oceanic crust.



Alessio Sanfilippo is a researcher at the Department of Earth and Environment Science of the University of Pavia (Italy), where he earned his PhD in 2012. He previously worked as a visiting PhD student and a post-doc at the Woods Hole Oceanographic Institution (Massachusetts, USA) and as a Japan Society for the Promotion of Science Postdoctoral Fellow at Kanazawa University (Japan). He researches the origin of mantle and crustal rocks from the oceanic crust–mantle boundary, coupling studies on Alpine ophiolites with modern mid-ocean ridges. Recently, he has investigated the isotopic evolution of the subridge mantle, including case studies from the equatorial Atlantic Ocean, the Arctic Ocean, and the alkaline volcanism associated with the Red Sea. Alessio has participated in seven oceanographic expeditions to the Atlantic, Indian, and Western Pacific oceans and is currently a co-author on three International Ocean Drilling Program proposals.



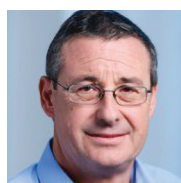
Pietro Sternai works on the interactions between geological processes occurring at the Earth’s surface and in its deep interior. He aims to improve our understanding of the relationships between climate changes and major tectonic events throughout Earth history by combining geodynamic and landscape evolution numerical modeling with geological observations. Fathering two sons and fostering theories about surface-process forcing on continental magmatic activity are amongst his major achievements. He received his PhD in geology from ETH Zurich (Switzerland) in 2012 and then worked at the University of Orléans (France), at ‘Caltech’ (California, USA), and at the University of Cambridge (UK) as a postdoc. He followed this up at the University of Geneva (Switzerland) as an Ambizione Research Fellow before being awarded a Levi–Montalcini Professorship at the University of Milano-Bicocca (Italy) in 2019.



Lucie Tajčmanová is a full professor at the Institute of Earth Sciences at Heidelberg University (Germany) who leads the Mineralogical and Petrological Processes Group. She implements multidisciplinary approaches – including field-based studies, deformation experiments, and numerical modelling – to investigate a wide spectrum of coupled chemo-mechanical processes in rocks. Her aim is to provide new quantitative and physical tools that can be used to better interpret common rock structures and microstructures. To date, she has been awarded a Humboldt Scholarship, a Marie Skłodowska-Curie Fellowship and a European Research Council starting grant.



Julie Tugend obtained her PhD from the University of Strasbourg (France) in 2013, which included work at the University of Liverpool (UK). As a postdoctoral research fellow at the École normale supérieure in Paris (France) she investigated the structural, magmatic, and stratigraphic interplay at rifted margins by coupling seismic and field observations to geophysical and geodynamic quantitative analyses. Based on her multidisciplinary approach, she aims to bring a new perspective to the 3D spatial and temporal variability of rifting processes and their subsequent role in passive margin architecture and the dynamics of convergence.



Peter Ulmer is associate professor of igneous and experimental petrology at the Department of Earth Sciences at ETH Zürich (Switzerland) where he obtained his PhD (1986) on a study of the Tertiary Adamello batholith in Northern Italy. After a postdoctoral fellowship at the Geophysical Laboratory, Carnegie Institution of Washington (USA), he returned to ETH Zürich as a staff member. His research is focused on the generation, differentiation, and transport of magmas from their sources to shallow crustal emplacement. He combines experimental petrology, geochemistry, and field studies. Research includes phase equilibria studies of primitive to evolved magmas in a variety of tectonic settings; transport, storage, and composition of fluids in subduction zones and in magmas; rheology of crystal-bearing magmas; partitioning of major and trace elements between solids, liquids, and fluids; and field-related studies in plutonic and volcanic terranes.



Pierre G. Valla is a CNRS Research Fellow at the Grenoble Alpes University (France). He combines field geomorphology, Earth surface geochronology, and wood logging to understand mountain erosion and landscape evolution. Since his PhD in Earth sciences (Grenoble Alpes University, 2011) and during his postdoctoral fellowships and Swiss National Science Foundation Professorship, he has worked on assessing the interplay between tectonics and climate and the impact of glaciations on Earth’s surface. He enjoys developing new analytical tools and applications in geochronology (low-temperature thermochronometry and modeling; rock-surface exposure methods). His current research focuses on quantifying the landscape response time to climate change during glacial/interglacial transitions.

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