

# Meet the Authors



**Olivier Bachmann** is an assistant professor of volcanology and igneous petrology at the University of Washington, Seattle. Although a native of a volcano-free country (Switzerland), he has always been attracted to these natural objects. He has studied volcanic deposits in many areas around the world, including supervolcanic units in Greece, Chile, and the United States. Recently, he has focused his research on the dynamics of volcanic systems (both in the magma chamber and in the atmosphere), trying to merge data from geochemistry, geophysics, and image analysis.



**George Bergantz** is a professor at the University of Washington. His interests are in the quantitative treatment of geological transport processes at various scales and in a variety of settings. His physical petrology group has as its main emphasis the physics of magmas, metamorphism, and eruption processes. To this end, the group is working on tying together the process of melt generation and transport in the deep crust and mantle, the ascent and hybridization of magmas in the mid-crust, and the assembly and life cycles of volcanic systems. The group has developed a diverse suite of tools integrating numerical modeling and laboratory experiments with geological and geophysical measurements.



**Stephen Blake** is a graduate of St Andrews and Lancaster universities. He held post-doctoral appointments at the Australian National University and the University of Auckland before returning to the UK

to join the Open University where he is a senior lecturer. His research is aimed principally at understanding the physical processes controlling all aspects of magma evolution and eruption. This work uses the petrology of igneous rocks, fluid dynamics, and physical volcanology and ranges from small basaltic monogenetic fields to the largest rhyolitic supereruptions.



**Shaul Hurwitz** is a research hydrologist with the U.S. Geological Survey in Menlo Park, California. His research interests are the coupling between groundwater flow, heat transfer, and mass transport

with various geological processes. His current emphasis is to characterize the spatial and temporal patterns in volcano-hydrothermal

systems and their relation to magmatic and volcanic activity. He has developed and applied a variety of techniques to quantify the dynamics of hydrothermal systems and their relation to various volcanic hazards. He is currently involved in studies at Yellowstone, Long Valley Caldera, Kilauea, and the Cascade Range.



**David A. John** is a research geologist with the U.S. Geological Survey's Mineral Resources Program. For his PhD research at Stanford University, he studied the variations of magmatic-hydrothermal fluids and

related mineral deposits as a function of paleodepth in mid-Tertiary intrusions in the Wasatch Mountains, Utah. His research focuses on hydrothermal systems and mineral deposits in volcanic rocks. He has studied several dismembered Tertiary supervolcanoes in Nevada, and currently he is studying active hydrothermal systems on Cascades volcanoes in the Pacific Northwest and mineral deposits in the ancestral Cascades arc in the western Great Basin.



**Jacob B. Lowenstern** is a research geologist with the U.S. Geological Survey in Menlo Park, California. He serves as scientist-in-charge of the Yellowstone Volcano Observatory, a partnership among the

USGS, the University of Utah, and Yellowstone National Park. To study the interaction of magmas and their overlying hydrothermal systems, he applies techniques such as gas and isotope geochemistry, igneous petrology, and U-Th-Pb geochronology. A 1986 graduate of Dartmouth College, he earned a PhD at Stanford University in 1992. In 2000, he received the Lindgren Award from the Society of Economic Geologists and in 2006 was an AAPG Distinguished Lecturer.



**Calvin F. Miller**, who teaches at Vanderbilt University (Nashville, Tennessee), has spent his career studying igneous processes, moving upward over the years to shallower and shallower levels of the

crust. In recent years he has investigated dynamic processes in ancient magma chambers now exposed as shallow plutons, zircon as a tracer of timescales, transport processes, evolving environments within chambers, and connections between plutons and volcanism. He was particularly inspired by the 2001 Penrose Conference on the longevity and dynamics of rhyolitic magma systems. This conference, held at Long Valley caldera, site of a well-studied supereruption, was attended by most of the authors of this issue.



**Mary R. Reid's** interest in crystal-scale magmatic processes began while she was a PhD student at the Massachusetts Institute of Technology. Her research groups at UCLA and Northern Arizona University have developed new analytical and theoretical approaches to quantifying the magmatic record of young volcanic systems, including in situ analyses of U-Th disequilibrium in minerals. In addition to exploring supervolcanoes in the western United States and Indonesia, she addresses the origin and evolution of the continental lithosphere. She is now a professor and the current chair of the Geology Department at Northern Arizona University.



**Stephen Self** is Professor of Volcanology at the Open University in the UK. He has studied volcanic activity and volcanic rocks in many parts of the world, concentrating on explosive eruptions, large (flood) lava effusions, and the impact of volcanism on the atmosphere. He has written over 170 articles and reviews in the scientific press, for books, and in other science magazines. He is a Fellow of the Geological Society of America and the Geological Society of London, and a member of the American Geophysical Union, the International Association of Volcanology, the Mineralogical Society, and the International Association of Sedimentology.



**David A. Wark** studied oceanography as a Michigan undergrad, but shifted his attention to large-volume eruption products while a graduate student at the University of Texas at Austin. He

continued to study volcanic rocks, but after joining the research faculty at the Rensselaer Polytechnic Institute focused increasingly on experimental geochemistry. This led to the development (with RPI colleagues) and application of new trace-element geothermometers that have strong potential to help unravel the complex thermal histories in many igneous systems. In 2007 he changed paths again, however, and now applies his scientific and analytical skills to the development of new technologies at GE's Global Research Center. He continues to study rocks in his spare time.

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**Colin J.N. Wilson** is a professor of volcanology at the University of Auckland, New Zealand. He studied at Imperial College, London, with George Walker and has worked extensively in New Zealand, as well as in

the western United States and Alaska. He studies large explosive eruptions, particularly those that generate ignimbrites, in order to understand eruption processes on various scales. He also does research on the generation of magmas at large silicic volcanoes (Taupo, Long Valley) and the dynamics of large silicic caldera volcanoes, integrating laboratory work with detailed field studies.



**Zhengjiu Xu** is a research associate in the Department of Geological Sciences at the University of Michigan. She obtained her BS and MS in chemistry from Peking University, and her MPhil and PhD in

chemistry from City University of New York. Later she switched to geochemistry and

experimental petrology. Her research focuses on infrared and experimental studies of silicate melts. She has also contributed to basic chemistry, in fields such as the atomic radii of the noble gas elements and the kinetics of chemical reactions.



**Youxue Zhang** is a professor of geological sciences at the University of Michigan. He was educated at Peking University (BS in geology) and Columbia University (MA, MPhil, and PhD in geology). Then he worked as a postdoctoral fellow at Caltech. He received the Clarke Medal from the Geochemical Society and the Young Investigator Award from the National Science Foundation. He is a Fellow of the GSA and the AAAS. He served on the board of the Geochemical Society. He uses experimental and theoretical approaches to study geochemical kinetics, magma properties, the evolution of volatiles in the Earth, and the mechanisms and dynamics of various gas-driven eruptions, including explosive volcanic eruptions, lake eruptions, and possible ocean eruptions.

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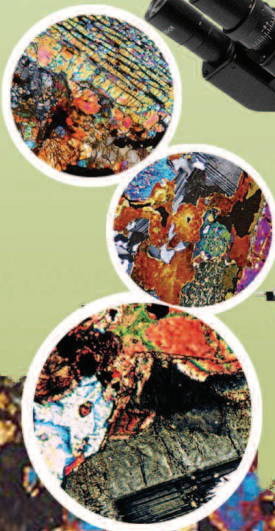
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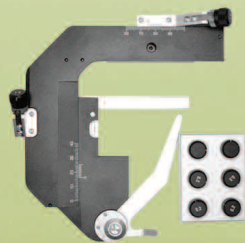
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