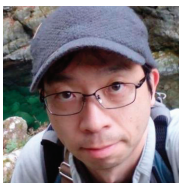
Meet the Authors

Catherine Annen is a research scientist at the Institute of Geophysics of the Czech Academy of Sciences. She received her PhD in 1999 jointly awarded by the University of Clermont-Ferrand (France) and the University of Geneva (Switzerland). She later worked as a researcher at the University of Bristol (UK) and University Savoie-Mont-Blanc (France). Her research focuses on modeling magma chambers and melt reservoirs to understand, for example, the conditions of magma chamber formation, magma differentiation, or plutonic–volcanic relationships.

Mutsuki Aoya is a field-based structural geologist mainly studying the formation and exhumation mechanisms of metamorphic rocks. For this purpose, he applies multidisciplinary studies including petrology, geochronology, and thermal modeling. His main research targets have been in southwestern Japan and southern Tibet, which are representatives of subduction- and collision-type regions, respectively. He worked at the Geological Survey of Japan (AIST) for eight years and has made several geological maps in and around the Shikoku Mountains in southwestern Japan. He is now at Tokushima University (Japan), located in the eastern part of Shikoku Island.

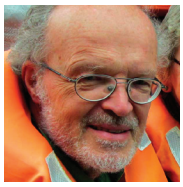


Shunsuke Endo is an associate professor of petrology at Shimane University (Japan). He received his PhD from Nagoya University (Japan) in 2010, where he studied exhumation tectonics of eclogites from the Sanbagawa belt and Guatemala. He then joined the Geological Survey of Japan (AIST) from 2012 to 2015. Since 2014, he has been working on geological mapping in the Shikoku Mountains. His research interests include the use of field observation, petrography, and thermodynamic modeling of metamorphic rocks to understand tectono–metamorphic processes in subduction zones.

Takeshi Ikeda studies metamorphic petrology and deals mainly with high-temperature metamorphic rocks in Japan and Antarctica. He is interested in the thermodynamic considerations of microstructures observed in metamorphic rocks such as non-equilibrium reaction structures, the shape and chemical composition of growing or deforming minerals, and crystal size distribution. He obtained his PhD from Kyoto University (Japan) and is an associate professor in the Department of Earth and Planetary Sciences at Kyushu University (Japan).

Kazuhiko Ishii is an associate professor at Osaka Metropolitan University, Japan—due to retire at the end of March 2024! He received his PhD from Tohoku University, Japan. His initial research interests focused on deformation processes of metamorphic and mylonitic rocks using microstructural analysis and numerical modeling. He subsequently expanded his field of study to include the relations between surface processes and the deep mantle. He has a particular interest in the geodynamics of subduction zones including back-arc spreading and the rheological properties of subducting slabs and has investigated these processes using numerical models incorporating flow on the scale of the whole mantle.

Tetsuo Kawakami is a professor in the Department of Geology of Mineralogy at Kyoto University (Japan), where he also received his bachelors, masters, and doctoral degrees. He participated in three expeditions to Antarctica and has conducted fieldwork in Nepal Himalaya, Tibet, Thailand, Philippines, Japan, and elsewhere. He is interested in the formation and evolution of the continental crust, particularly the role of fluids and partial melting in the active lower crust in its chemical evolution and mountain building processes. He is also interested in linking the *P*–*T*–*D*–melting-fluid path of metamorphic rocks with geochronology.



Ulrich Knittel is a retired Earth scientist who taught petrology at RWTH Aachen University and geochemistry at Mainz University and TU Bergakademie Freiberg (all in Germany). He worked as a visiting research fellow at the University of Melbourne (Australia) and the National Taiwan University. Most of his publications deal with the petrology and isotope geochemistry of igneous rocks from the Philippines. His interest in the Sanbagawa belt was sparked by Miyashiro's book on paired metamorphic belts and was rekindled by Shigeyuki Suzuki, who asked him if he could analyze zircon from a borehole drilled into the Sanbagawa belt in northeastern Shikoku.

Yui Kouketsu is a lecturer of the petrology and mineralogy laboratory at Nagoya University (Japan). She received her PhD from Nagoya University in 2013, followed by two years of spectroscopy research as a JSPS postdoctoral fellow at the University of Tokyo (Japan). Since 2015, she has been a faculty member at Nagoya University, specializing in metamorphic petrology and mineral spectroscopy. She has applied spectroscopy to geology and developed geothermobarometers, and is applying these methods to metamorphic rocks such as the Sanbagawa belt, Yuli belt, and Himalaya to understand their metamorphic histories.

Kazuhiro Miyazaki is an invited senior researcher of the Geological Survey of Japan (GSJ), National Institute of Advanced Industrial Science and Technology. He received his PhD from Kyushu University (Japan). His research focuses on growth kinetics of metamorphic minerals, metamorphic rock pattern formation, metamorphic petrology, numerical modeling of metamorphic mineral growth, metamorphic rock textures, and metamorphic belts in subduction zones. He conducted a geological mapping project of Japan as project lead with GSJ, and completed a 1/200,000 geological map of Japan in 2010.

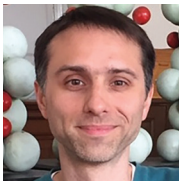
Tomoyuki Mizukami is an assistant professor of Earth and planetary sciences at Kanazawa University (Japan). He received his PhD from Kyoto University (Japan) in 2004. The Sanbagawa belt has been a main field throughout his research career: during his PhD, as a postdoctoral researcher at the Geochemical Laboratory in the University of Tokyo (Japan), and as a JSPS fellow at Nagoya University (Japan). He works on chemical and geodynamic processes across the mantle–crust interface, especially for non-steady-state behaviors of subduction boundaries, using petrological and structural analyses of natural rocks.

Takayoshi Nagaya has been a lecturer at Tokyo Gakugei University (Japan) since 2023. After receiving his PhD from Nagoya University (Japan) in 2016, he studied experimental petrology at Tohoku University (Japan) and structural geology at the University of Southern California (USA), then joining the University of Tokyo (Japan) as a faculty member in 2019. He focuses on rock structures within the crust and upper mantle of subduction zones using mineral physics and structural geology–petrology–seismology based on field observations, microstructural analyses of natural and experimental samples, and numerical modeling of seismic data.

Atsushi Okamoto is a professor of environmental studies at Tohoku University (Japan). He received his PhD from University of Tokyo (Japan) in 2003 for a petrological study of Sanbagawa metamorphic rocks. Since 2005, he has studied various fluid–rock interactions, including serpentinization and carbonation, silica precipitation related to geothermal systems, and metasomatic reactions within

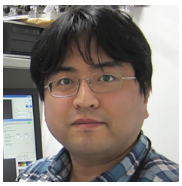
subduction zones. He approaches the dynamics of fluid–rock interactions using hydrothermal experiments, field observations, geochemical modeling, and the numerical modeling of microstructural evolution.

Takamoto Okudaira is a professor in the Department of Geosciences at Osaka Metropolitan University (formerly Osaka City University, Japan). He received a PhD at Hiroshima University (Japan). His research aims to understand crustal dynamics via petrological and structural analysis of microstructures developed in metamorphic tectonites formed at the middle to lower continental crust and of tectono–metamorphic processes of low-pressure/high-temperature metamorphic belts, including the Ryoke belt. Neotectonics related to earthquakes is also his research interest. He conducts fieldwork at various locations in Japan, Pakistan, India, and Norway.



Etienne Skrzypek is an assistant at Karl-Franzens University of Graz (Austria). He studied at the University of Strasbourg (France) until his doctoral degree, followed by postdoctoral stays with the French Geological Survey (BRGM), the University of Wrocław (Poland), and Kyoto University (Japan). He relies on more or less demanding field work, hours with the optical microscope, and various geochronometers to explore the tectono–thermal evolution of orogenic systems (European Variscan belt, Ryoke arc, western Tian Shan, and eastern Alps). He especially tries to connect (micro)structural, petrological, and geochronological data (from e.g., porphyroblasts, monazite, allanite) to constrain the geometry, scale, and timing of processes operating within the continental crust.

Tetsuya Tokiwa is a field-based geologist who studies the tectonics of southwestern Japan during the Cretaceous using geochronology, structural geology, and radiolarian stratigraphy. The Shimanto accretionary complex has been a main field throughout his research career. He is actively involved in deciphering the processes of accretionary complex formation through the analysis of deformation structures and detrital zircon U–Pb dating, contributing to a broader understanding of geological history. Additionally, his expertise extends to the creation of wide-area geological maps, providing valuable frameworks for geological research and education. He received his PhD from Nagoya University (Japan) in 2009, and is an associate professor in the Faculty of Science at Shinshu University (Japan).



Yukiyasu Tsutsumi is a senior curator of geology at the National Museum of Nature and Science (NMNS) in Japan. He was the first person in Japan to receive a PhD based on zircon geochronology from Hiroshima University (Japan) in 2003. His main research interest is using geochronology to reconstruct the geological history of the Japanese Islands, and furthermore the whole of the circum-Japan Sea area. Currently, his main research objects are igneous rocks and non-metamorphosed sedimentary rocks in southwest Japan, although his experience with chronological studies on the Sanbagawa belt have also influenced his research.

Simon Wallis is a professor of geology at the University of Tokyo (Japan). He received his PhD from University of Oxford (UK) in 1988. He moved to Japan as a post doc and worked at Kyoto and Nagoya Universities (both in Japan) with a two-year interlude as an investment banker before moving to the University of Tokyo. His work focuses on the structural geology and petrology of metamorphic domains, which he combines with geochronology, thermal modeling, and theoretical work to help understand the development of convergent plate margins including both subduction zones and continental collision zones.

Jonny Wu is an associate professor at the University Arizona (USA) and earned his PhD at Royal Holloway, University of London (UK). His research in plate tectonics aims to reconstruct Earth history in 4D using structural geology and tectonics, geophysics, and geodynamics. An overarching research theme is to reconcile Earth's surface geology with subsurface structures to learn about Earth's past, present, and future. Current research areas include East Asia and the circum-Pacific.

Tsung-Jui "Jeremy" Wu is a Taiwanese igneous geochemist with expertise in plate tectonics, magma genesis, and convergence margin dynamics. After completing his BS and MSc degrees at National Taiwan University, he achieved his PhD in geology from the University of Houston (USA). His doctoral work on the NW Pacific–Eurasian subduction history and continental arc evolution deepened the understanding of NE Asia's geological context and NW Pacific plate tectonics. Lately, Jeremy has integrated digital plate models, data science approaches with geochemical analyses, and fieldwork to explore subduction zones, mantle dynamics, and the Earth's tectonic evolution.

Ken Yamaoka is a field geologist who studies plutonism and tectonics in subduction zones using petrological and structural geological approaches incorporating numerical modeling. Recently, his research interest focuses on the link between contact metamorphism and magma emplacement. He received his BS degree from Shinshu University (Japan) before obtaining his PhD from the University of Tokyo (Japan) in 2023. He now works at the National Institute of Advanced Industrial Science and Technology (AIST) (Japan), where he is participating in a long-term project to produce geological maps of the Japanese Islands.