

# Meet the Authors



**Ariel D. Anbar** is a professor in the School of Earth & Space Exploration and the Department of Chemistry & Biochemistry at Arizona State University, where

he directs the astrobiology program. He received an AB from Harvard University and a PhD from California Institute of Technology. Anbar is a biogeochemist interested in the past and future evolution of the Earth as a habitable planet and in how this knowledge informs the search for inhabited worlds beyond Earth. Much of his research focuses on the use of “nontraditional” stable isotope systems, such as the molybdenum and iron systems, to explore changes in ocean oxygenation through time.



**Bridget A. Bergquist** is an assistant professor in the Department of Geology at the University of Toronto, Canada. She received her BS in geology and chemistry from the University of

Wisconsin–Madison in 1996 and her PhD from the MIT/WHOI Joint Program in marine chemistry and geochemistry in 2004. After her PhD, she was the Turner Postdoctoral Fellow in the Department of Geological Sciences at the University of Michigan. She uses trace metal and stable isotope geochemistry to understand the biogeochemical cycles that are important for life on Earth and how these cycles have evolved over time. Currently her work focuses on understanding iron in the ocean and mercury biogeochemical cycling and bioaccumulation.



**Joel D. Blum** is the MacArthur Professor at the University of Michigan and has research interests at the intersection between isotope geochemistry and ecology. He received

his PhD from Caltech, MS from the University of Alaska, and BA from Case Western Reserve University. Much of his research has involved the application of radiogenic isotopes (Sr, Nd, Pb) to problems in forest and aquatic ecology, mineral weathering, and paleoceanography. After developing methods for the measurement of natural variations in Hg stable isotopes about ten years ago, his group began a research program aimed at utilizing the Hg isotope system to address unanswered questions related to the biogeochemistry of Hg.



**Florian Böhm** is a senior scientist at the Leibniz Institute of Marine Sciences (IFM-GEOMAR) in Kiel, Germany. He obtained his diploma and PhD in geology/paleontology at

the Institute of Paleontology of the University of Erlangen, Germany. His research on carbonate sedimentology of Mesozoic limestones brought him to isotope geochemistry and the sclerochronology of modern corals and sclerosponges. His current research deals with the fractionation of calcium and strontium isotopes in inorganic and biogenic carbonates, from alpine mountains down to the abyssal ocean crust.



**Thomas D. Bullen** is a research hydrologist with the U.S. Geological Survey in Menlo Park, California, where he directs an isotope facility known for its efforts to develop several

of the “nontraditional” stable isotope systems. He received his BA and MA from Dartmouth College and his PhD from the University of California at Santa Cruz. His research focuses on using chemistry and isotope systematics of the metals and metalloids to understand water–rock interactions, plant–soil linkages, contaminant sources, transport processes and fates, and biogeochemical cycles.



**Anton Eisenhauer** is a professor of marine environmental geology and geochemistry at the Leibniz Institute of Marine Sciences (IFM-GEOMAR) at the

Christian Albrechts Universität zu Kiel in northern Germany. He is interested in the development of traditional and nontraditional isotope systems. In recent years he has used Ca and Mg isotope systems to study isotope fractionation and element discrimination processes on the pathway from a bulk solution to the site of calcification. Currently, he is studying long-term changes in the marine strontium budget by applying stable strontium isotope fractionation. His interests in isotope geochemistry began at Caltech where he learned isotope ratio mass spectrometry.



**Monika Guelke** graduated in 2005 in geosciences at the Leibniz University of Hannover, Germany. Her diploma thesis at the Institute of Mineralogy (isotope geochemistry group)

dealt with iron isotope fractionation processes in higher plants, which sparked her interest in iron isotope fractionation processes in the biosphere and led to her current PhD project on this topic. She uses plant-growth experiments and soil-extraction procedures to determine the soil–plant iron isotope fractionation factor and to find out in which way iron isotope ratios may be used to define predominant binding forms of iron in plants.



**Pamela S. Hill** is a PhD candidate in geochemistry at the University of California, Los Angeles. She holds degrees in math (BA, University of Oregon Honors College), physics (MS, University

of Washington), and geology (MS, California State University, Long Beach). Pam’s current research centers on integrated theoretical and experimental studies of the effects of bond environment on equilibrium Fe isotope fractionation. Her previous research included analysis of Milankovitch-related cyclicity recorded in gamma ray logs of the Monterey Formation to determine the stratigraphic evolution of the late Neogene offshore Central California margin. Her research interests include applications of stable isotope geochemistry to biogeochemical cycles and paleoclimatology.



**Başak Kısakürek** received her BSc from Istanbul Technical University (Turkey) and studied oceanography at the National Oceanography Centre in Southampton (UK). She

was awarded a PhD in isotope geochemistry from the Open University (UK) in 2005 and now holds a postdoctoral position at the Leibniz Institute of Marine Sciences (IFM-GEOMAR) in Germany. Her research focuses on the fractionation of stable isotopes (Li, Ca, Mg) during biogenic carbonate formation and continental weathering processes. She studies biomineralization processes through which biogenic carbonates gain their isotopic and elemental signatures.



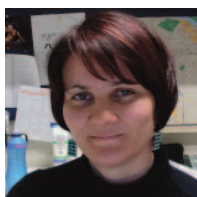
**Merlin Méheut** is an assistant professor of mineralogy at the University Paul Sabatier, Toulouse (France). He received his PhD from the Université Pierre et Marie Curie of Paris

(France) and then carried out postdoctoral research in the Department of Earth and Space Sciences at the University of California, Los Angeles. He applies electronic-structure methods from solid-state physics research to Earth science problems. His recent research has focused on calculating equilibrium O, Si, and H isotope fractionation between rock-forming minerals. He is also investigating relationships between mineral structures and thermodynamic properties such as isotope fractionation.



**Edwin A. Schauble** is an associate professor of geochemistry and astrobiology at the University of California, Los Angeles. He received his PhD in geology from the California Institute of

Technology in 2002. He is a stable isotope geochemist interested in natural isotope separation processes at atomic and molecular scales. He has studied several heavy-element isotope systems of emerging interest, including silicon, calcium, iron, mercury, and thallium. He has also developed theoretical calibrations of the  $^{13}\text{C}$ - $^{18}\text{O}$  “clumped” isotopologue paleothermometer in carbonate minerals.



**Silke Severmann** is an assistant professor at Rutgers University (USA). She earned her PhD from the University of Southampton (UK), and then spent several years as a postdoctoral

researcher and later as a research associate, with appointments at the National Oceanography Center, Southampton, the University of Wisconsin–Madison, and the University of California, Riverside. Her joint appointment between the departments of Earth & Planetary Sciences and Marine & Coastal Sciences reflects her dual interest in modern biogeochemical processes and their reconstruction in the geological record. Her primary interest is in the development of metal isotopes as tools to trace the interactions among chemical, physical, and biological processes.



**Friedhelm von Blanckenburg** is a professor of geochemistry at the German Research Center for Geosciences GFZ in Potsdam and the Free University of Berlin, Germany. He applies

isotope geochemical techniques, especially “nontraditional” stable isotopes and cosmogenic nuclides, to geochemical cycles at the Earth’s surface. He graduated from the Technical University of Berlin and completed his PhD in isotope geochemistry at ETH Zürich, Switzerland. He spent seven years as a research fellow at the University of Cambridge and the University of Oxford, UK, followed by four years as a lecturer at the University of Berne, Switzerland, and seven years as a professor of geochemistry at the University of Hannover, Germany.



**Nicolaus von Wirén** is the director of the Department of Physiology and Cell Biology at the publicly funded Leibniz Institute for Plant Genetics and

Crop Plant Research in Gatersleben, Germany. After studying agrobiology in Hohenheim, he was trained in molecular biological techniques at the University of Tokyo and the University of Tübingen, as well as in biochemistry at the ENSAM-INRA in Montpellier and London. He then accepted the position of chair for plant nutrition at the University of Hohenheim, Stuttgart. His current research deals with nutritional aspects of crop plants, such as nutrient sensing and transport mechanisms, and the improvement of quality traits.



**Thomas Walczyk** is an associate professor at the National University of Singapore (NUS), where he holds joint appointments in the Faculty of Science (Department of Chemistry) and the

School of Medicine (Department of Biochemistry). He studied general chemistry at the University of Regensburg, Germany, and received his PhD in analytical chemistry and isotope sciences from the same university in 1994. After 13 years in life science research at ETH Zürich, he joined NUS in 2007, where he heads NutriTrace@NUS, a research group dedicated to the exploration of mineral and trace element metabolism in humans using stable isotope techniques.



**Dominik J. Weiss** is a senior lecturer in environmental geochemistry at Imperial College London. After degrees at ETH Zürich and the University of Bern and a postdoctoral stint at

MIT, he joined the faculty of the Department of Earth Science and Engineering at Imperial College. His group studies the biogeochemical cycles and the bioinorganic chemistry of trace elements in air, soils, plants, and waters. Topics his group investigates include long-range pollutant and dust transfer to remote locations, argide reactions in collision cells, zinc efficiency in rice, and the development of new sorbents for arsenic. He is a co-leader of MAGIC—the mass spectrometry laboratories at Imperial College.

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