

Meet the Authors



E. Eric Adams is a senior research engineer in the Department of Civil and Environmental Engineering at the Massachusetts Institute of Technology. He holds degrees from Harvey

Mudd College (BS) and MIT (MS and PhD). His professional interests include environmental fluid mechanics, physical and mathematical modeling of pollutant transport and mixing, and the design and environmental evaluation of effluent disposal systems. His recent research has focused on multiphase plumes with applications to ocean carbon sequestration, the fate of deep-sea oil spills, and dredged material disposal.



Sally M. Benson is the executive director of Stanford University's Global Climate and Energy Project and a professor (research) in the Department of Energy Resources

Engineering in the School of Earth Sciences. She is an internationally recognized expert in the storage of carbon dioxide in geological formations and was a coordinating lead author for the IPCC Special Report on Carbon Dioxide Capture and Storage, published in 2005. She is currently the coordinating lead author of the chapter on carbon dioxide capture and storage for the Global Energy Assessment (GEA). Benson graduated from Barnard College with a BA in geology. She completed her MS and PhD at the University of California, Berkeley, in materials science and mineral engineering.



Ken Caldeira is a climate scientist and chemical oceanographer at Carnegie Institution's Department of Global Ecology at Stanford University since 2005. He studies the global

carbon cycle; marine biogeochemistry and chemical oceanography, including ocean acidification and the atmosphere/ocean carbon cycle; land cover and climate change; the long-term evolution of climate and geochemical cycles; and energy technology. Caldeira was a coordinating lead author of an Intergovernmental Panel on Climate Change (IPCC) report on carbon storage in the ocean. From the early 1990s to 2005, he was with the Energy and Environment Directorate at the Lawrence Livermore National Laboratory. Caldeira received his

BA from Rutgers College and both his master's (1988) and PhD (1991) in atmospheric sciences from New York University.



David R. Cole is a Distinguished Staff Scientist and head of the Aqueous Chemistry and Geochemistry Group in the Chemical Sciences Division at Oak Ridge National Laboratory,

Tennessee. He obtained his PhD in geochemistry and mineralogy from the Pennsylvania State University. His research interests include the application of conventional stable isotope and ion microprobe techniques to problems of transport in high temperature magma-hydrothermal systems, diagenesis in sedimentary basins, alteration in geothermal systems, and paleoclimate reconstruction. He has been engaged in both bench-scale and field-scale studies of water-rock interaction relevant to subsurface CO₂ injection. He is an associate editor of *Geochimica et Cosmochimica Acta* and *American Mineralogist*. He is the International Program Chair for the 2010 Goldschmidt Conference to be held in Knoxville, Tennessee.



Sigurdur Reynir Gislason is a research professor and chair of the aquatic geochemistry group at the University of Iceland's Institute of Earth Sciences, where he studies

water-rock, water-air and water-biomass interactions by field and laboratory experimental studies. Gislason was educated at the University of Iceland and at the Johns Hopkins University, USA, where he earned his PhD in geochemistry in 1985. He is the chair of the scientific steering committee for the CarbFix project. He currently serves on the editorial board of *Chemical Geology*, and he chairs the Geochemistry of the Earth's Surface (GES) Working Group of the International Association of GeoChemistry.



Juerg Matter is a Doherty Associate Research Scientist at the Lamont-Doherty Earth Observatory of Columbia University in New York, USA. Juerg studied Earth sciences at the Swiss

Federal Institute of Technology in Zurich (ETHZ), Switzerland, where he received a Master of Science degree before completing his PhD in natural sciences at ETHZ. His

main research interests center on permanent carbon dioxide sequestration through mineralization in reactive rocks, including basalt and ultramafic rocks, and through storage in suboceanic sediments. He is currently working on assessing the in situ mineral-carbonation potential of basalt and ultramafic rocks and is developing monitoring techniques to trace CO₂ transport and reactivity in the geologic subsurface. He is involved in several geologic sequestration field projects in the U.S., Iceland, Oman, and India.



Eric H. Oelkers is a research director at the CNRS in Toulouse, France. Eric received BS degrees in chemistry and in Earth and planetary science from MIT

before completing his PhD at the University of California, Berkeley. He is currently president of the European Association for Geochemistry, coordinator of the MIR and MIN-GRO European Research and Training Networks, and member of the Scientific Steering Committee of CarbFix. Eric's research is aimed at providing the fundamental basis for sustainable development. This research includes developing the thermodynamic and kinetic framework for (1) predicting the fate and consequences of CO₂ during sequestration efforts, (2) enhanced oil recovery, (3) understanding ore-forming processes, and (4) toxic/radioactive waste immobilization.



Edward S. Rubin is the Alumni Professor of Environmental Engineering and Science and holds joint appointments in the departments of Engineering and Public Policy and

Mechanical Engineering at Carnegie Mellon University. He was founding director of the Center for Energy and Environmental Studies and the Environmental Institute. He was a coordinating lead author of the Special Report on Carbon Dioxide Capture and Storage by the Intergovernmental Panel on Climate Change (IPCC). He serves on advisory committees of the U.S. Department of Energy, the U.S. National Academies of Science and Engineering, and the National Research Council's Board on Energy and Environmental Systems.