

Meet the Authors



S. Julio Friedmann received his BS and MS degrees from MIT, followed by a PhD at the University of Southern California. After graduation, he worked for five years as a senior research scientist in

Houston, first at Exxon and later at Exxon-Mobil. He next worked as a research scientist at the University of Maryland, where he was affiliated with the Joint Global Change Research Institute (JGCRI), and at the Colorado Energy Research Institute of the Colorado School of Mines. In his new appointment as head of the Carbon Management Program for Lawrence Livermore National Laboratory, he leads initiatives and research into carbon capture, carbon storage, and fossil fuel recovery and utilization. His research interests include carbon sequestration, underground coal gasification, hydrocarbon systems, deep-water depositional systems, basin and range tectonics and sedimentation, sequence stratigraphy, and landslide physics.



Allison M. Macfarlane is an associate professor in the Department of Environmental Science and Policy at George Mason University in Fairfax, VA. She is also an affiliate of the Program in Science,

Technology, and Society at MIT and the Belfer Center for Science and International Affairs at Harvard University. She received her PhD in geology from the Massachusetts Institute of Technology in 1992. Her research focuses on international security and environmental

policy issues associated with nuclear weapons and nuclear energy. MIT Press has just published her book *Uncertainty Underground: Yucca Mountain and the Nation's High-Level Nuclear Waste*, which explores the unresolved technical issues for nuclear waste disposal at Yucca Mountain, Nevada.



Marvin Miller received a PhD in applied physics from the Polytechnic Institute of New York in 1967. He was tenured as an associate professor of electrical engineering at Purdue University before

joining the MIT Nuclear Engineering Department (NED) in 1976. He retired from NED in 1996 and is now a research affiliate with NED and the Program in Science, Technology, and Society at MIT, where he continues his work on nuclear arms control and the linkage between nuclear power and nuclear proliferation. Dr. Miller is currently active as a consultant to the Nonproliferation Bureau of the State Department.



Carolyn Ruppel recently joined the methane hydrates program at the U.S. Geological Survey as a research geophysicist after more than 12 years as a professor in the School of Earth and Atmospheric

Sciences at Georgia Tech and several years as a program manager at the U.S. National Science Foundation. She holds a PhD in solid Earth geophysics from MIT and has focused on numerical modeling, laboratory, and interdis-

ciplinary shipboard studies of marine methane hydrate systems since the mid-1990s. Her current research interests include the petrophysics of hydrate-bearing sediments, the hydrogeology of marine and permafrost gas hydrate systems at pore to regional scale, the integration of physical, chemical, and biological data to understand methane seeps, and the hydrology of ecologically sensitive salt marshes subject to both natural and anthropogenic forcing.



Daniel P. Schrag is Professor of Earth and Planetary Sciences at Harvard University and the director of the Harvard University Center for the Environment. Schrag studies climate and climate

change over the broadest range of Earth history. He has examined changes in ocean circulation over the last several decades, with particular attention to El Niño and the tropical Pacific. He has worked on theories for Pleistocene ice-age cycles. He has contributed to the development of the Snowball Earth hypothesis, which proposes that a series of global glaciations occurred between 750 and 580 million years ago and that they may have led to the evolution of multicellular animals. He is also working on technological approaches to mitigating the effects of human-induced climate change. Among various honors, Schrag was awarded a MacArthur Fellowship in 2000. Schrag arrived at Harvard in 1997 after teaching at Princeton and studying at Berkeley and Yale.



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