

U.S. National Committee for the International Union for Quaternary Research (USNC/INQUA)

Committee

Natalie M. Kehrwald

Chair

Dr. Natalie Kehrwald is a Research Geologist at the Geosciences and Environmental Change Science Center in Denver, Colorado. She came to the USGS after working as a Research Scientist at the Ca' Foscari University of Venice. Kehrwald was awarded the Marie Skłodowska Curie post-doctoral fellowship to work with the Italian National Research Council. She studies interactions between climate, fire and humans using biomarkers in ice cores and sedimentary records. Droughts and vegetation changes can affect fuel availability, and changing atmospheric conditions can alter the number of natural fire ignitions through lightning strikes. Humans are particularly adept at setting fires both for survival (cooking, warmth, and land clearance) but also often accidentally ignite wildfires. Paleoclimate records such as lake cores and ice cores provide detailed records of fire activity, variations in precipitation, changing vegetation and human activity through time, and help place recent droughts and wildfires into the context of a longer timescale.

Yemane Asmerom

Member

Dr. Yemane Asmerom is a Distinguished Professor of Isotope Geochemistry in the Department of Earth & Planetary Sciences at The University of New Mexico. His research interests include climate/atmospheric sciences, geochemistry, petrology, mineralogy and surface processes. He founded and is the director of the Radiogenic Isotope Laboratory. Asmerom's research group and international collaborators address wide-ranging research topics from climate change on Earth at various time scales to exploring the evolution of the solar system. His research group aims to provide constraints on future climate change based on high-resolution paleoclimate data with a focus on "policy actionable science." Over the last decade, he has been part of the leading edge in the technical (e.g. half-life determinations, ionization techniques, chemical procedures, and instrumental configurations), conceptual and applied developments in uranium-series isotope geochemistry. He has applied long-lived radiogenic isotopes in many novel applications, including uplift rates of terrains and inception and incision rates of the Grand Canyon. Asmerom is also a Geochemical Fellow and Follow of the Geological Society of America. He is a relentless advocate for broader participation of women and minorities in the sciences and institutional transformation locally and nationally. His interests extend to the origin and evolution of the solar system, in subjects ranging from the latest magmatism in the Moon to the nature of Martian crust.

Tripti Bhattacharya

Member

Tripti Bhattacharya is currently the Thonis Family Associate Professor of Paleoclimate Dynamics at Syracuse University. Her research focuses on the dynamics and variability of the water cycle over Earth history. Her work uses an integrative approach by combining organic geochemical indicators of past rainfall with climate models and observations to understand the drivers of past, present, and future changes. She is a Sloan Foundation Fellow, and has won an NSF CAREER grant as well as the Nanne Webber Early Career award from the Paleooceanography and Paleoclimatology section of the American Geophysical Union. Prior to her appointment at Syracuse, she received her PhD at the University of California Berkeley and thereafter did a postdoctoral fellowship at the University of Arizona. In 2021, she served on the organizing committee for a NAS workshop on Identifying New Community-Driven Science Themes for NSF's Support of Paleo Perspectives on Climate Change (P2C2): A Workshop.

Thure E. Cerling

Member

Thure E. Cerling is the Francis Brown Presidential Chair of Geology & Geophysics and a Distinguished Professor of Biology with the Geology and Geophysics Department at the University of Utah. His research is in geochemistry of processes occurring at near Earth's surface and the geological record of ecological change. It includes the isotope physiology and diets of modern mammals as well as the history of diets of different mammalian lineages extending over millions of years. He is also interested in the geology of Old World paleoanthropologic sites, such as are found in the Turkana Basin in East Africa and other Rif Valley sites. He studies modern soils, lakes, and ecosystems in an effort to apply isotope systematics to understand the evolution of ecosystems, monsoons, and the atmosphere over geological time scales. By using isotopes produced by cosmic rays in situ in rocks, his research group studies the evolution of the landscapes over the last 1 million years. Cerling is also involved in environmental studies, including the use of tritium and helium as hydrological tracers, and in understanding contaminant migration in surface or groundwaters.

Loren G. Davis

Member

Dr. Loren G. Davis is the Executive Director of the Keystone Archaeological Research Fund at Oregon State University. He directs a research group that primarily focuses on the discovery and study of archaeological sites from western North America that date before 12,000 years ago. This time period, known as the Pleistocene, corresponds with the earliest evidence of human occupation in the Americas. The quest to find early sites takes him and his students to different locations in western North America including western Idaho's lower Salmon River canyon, Oregon's northern Great Basin, Willamette Valley, and Pacific coastline, and also to the Baja California peninsula in northwestern Mexico. This research is supported by private donations, including the million-dollar endowed Keystone Archaeological Research Fund, and grants from agencies such as the Bureau of Land Management, Bureau of Ocean Energy Management, and the National Science Foundation. His laboratory is part of the Department of Anthropology at OSU and is a place where he works with students and colleagues to conduct research in support of many projects. Current laboratory projects involve studying the Cooper's Ferry archaeological collection and developing advanced 3D scanning and analysis approaches for stone tools.

Melissa Pardi

Member

Dr. Melissa Pardi is an Assistant Curator of Geology with the Research & Collections Center at the Illinois State Museum. She is also an Adjunct Assistant Professor for both the Department of Environmental Sciences at the University of Illinois Springfield and the Department of Biological Sciences at the University of New Mexico. She is a conservation paleoecologist who uses a historical perspective to investigate the influence of changing environments on: range dynamics and biogeography, interactions within communities, and realized niches. While she has worked on everything from the modern to deep time, the focus of her work is on the late Quaternary and the consequences of the end Pleistocene extinction.

Summer K. Praetorius

Member

Dr. Summer Praetorius is a Research Geologist with the Geology, Minerals, Energy, and Geophysics Science Center at the U.S. Geological Survey. She received a PhD in Oceanography from Oregon State University in 2014. Since joining the USGS in 2016, she has been using foraminiferal micropaleontology and other geochemical proxies to reconstruct changes in ocean properties in the past (circulation, temperature, and salinity). At the USGS, her work has focused largely on oceanographic changes in the North Pacific from the last Ice Age through the Holocene period. Her research interests include the dynamics of abrupt climate change, the history and climate impacts of the Missoula Floods, interactions between volcanism and climate in the past, ocean hypoxia, and coastal archaeological shell middens as paleoceanographic archives.

Aradhna Tripati

Member

Dr. Aradhna Tripati grew up in Los Angeles and when she was in college, took a general education course on Environmental Geology that ignited her passion for environmental science and geoscience. She researches and teaches about climate change; the history and dynamics of changing Earth systems including climate, ice sheets, oceans, the water cycle, carbon dioxide levels; tool development; and clumped isotope geochemistry. She is Professor in the Institute of the Environment and Sustainability (IoES), the Department of Atmospheric and Oceanic Sciences, the Department of Earth, Planetary, and Space Sciences, the Institute for Geophysics and Planetary Physics (IGPP), and the California Nanosystems Institute (CNSI), as her work is highly interdisciplinary.

Aradhna is also the faculty director and founder of the Center for Diverse Leadership in Science. She has mentored, advised, co-advised, trained, or served on the committee for over 130 postdoctoral fellows and researchers, Ph.D. students, M.S. students, undergraduates, high school teachers, and high school students. Aradhna has over 3000 citations for her research, and has established world-renowned laboratories. She has 66 publications of which 12 are in Nature journals, Science, or Proceedings of the National Academy of Sciences, 181 conference abstracts, 13 invited talks and three keynote lectures at international conferences, and 50 invited talks at universities and research institutes. Her lifelong goals include advancing new geochemical tracers for the study of Earth system processes, studying the history and dynamics of climate change, and working to educate, recruit, and retain a diverse population into environmental science and geoscience, and more generally in higher education.

Aradhna has received numerous awards for her research, education, and outreach programs including a Presidential Early Career Award in Science and Engineering from President Obama and the White House Office for Science, Technology, and Policy, and the National Science Foundation's CAREER award, NSF's most prestigious award in support of early career faculty who exemplify the role of teacher-scholars through outstanding research, excellent education and the integration of education and research within the context of the mission of their organizations. She received the Bromery Award for Minorities from the Geological Society of America. Aradhna has been named a Hellman Fellow and a National Academy of Sciences Kavli Fellow, and recently received the E.O. Wilson Award for Outstanding Science on climate change. She also was awarded a Chair International D'Excellence in Stable Isotopes by IUEM (Institut Universitaire European De La Mer).

Mark R. Sweeney

Ex Officio Member

Mark Sweeney is Professor in the Department of Sustainability & Environment at the University of South Dakota. His research involves human and climatic influences on geomorphology and sedimentology of drylands throughout the Quaternary Period, specifically focusing on aeolian processes and dust emissions. Sweeney is a member of the Geological Society of America and Past Chair of GSA's Quaternary Geology & Geomorphology Division. In 2009, Sweeney received the GSA Gladys Cole Award for research on geomorphology of arid lands. Sweeney completed a post-doc at the Desert Research Institute, his Ph.D. at Washington State University, and M.S. and B.S. in geology at the University of Nebraska-Lincoln.