

# Functions and Criteria for a New Center for Paleoenvironmental Records of Extreme Events

## Committee

### Roberta Marinelli

#### Chair

Dr. Roberta Marinelli is a Professor in the College of Earth, Ocean, and Atmospheric Sciences at Oregon State University, and a Senior Advisor to the Provost. From 2021-23, she was the Director of the Office of Polar Programs at the National Science Foundation, where she oversaw NSF's portfolio of research and infrastructure in the Arctic and Antarctic Regions. From 2016-2022, Dr. Marinelli was the Dean of the College of Earth, Ocean, and Atmospheric Sciences at Oregon State University. As Dean, Marinelli promoted the development and successful acquisition of major research projects, large facilities, and academic programs that span earth system science themes and include the human dimension. Prior to her arrival at OSU, Dr. Marinelli was the Executive Director of the Wrigley Institute for Environmental Studies at the University of Southern California (2011-2016). Her prior experience also includes professorial positions at the University of Georgia's Skidaway Institute of Oceanography, and the University of Maryland's Center for Environmental Science, where her research program focused on the ecology and biogeochemistry of the seafloor. She was among the early recipients of an NSF CAREER award in Chemical Oceanography. Marinelli received her A. B. from Brown University and her M.Sc. And Ph.D. from the Marine Science Program at the University of South Carolina.

### Kevin J. Anchukaitis

#### Member

Dr. Kevin Anchukaitis is a Professor of Earth Systems Geography in the School of Geography, Development, and Environment and the Laboratory of Tree-Ring Research at the University of Arizona. He is a climate scientist, paleoclimatologist, dendrochronologist, and earth systems geographer specializing in the reconstruction and analysis of past climate variability and change and the interaction between climate and human society. He uses an array of techniques to develop and interpret evidence for past, present, and future climate dynamics across a range of temporal and spatial scales, from local to global and daily to millennial. These include dendroclimatology, climate field reconstruction and spatiotemporal data analysis, stable and radiogenic isotope geochemistry, forward and numerical modeling of paleoclimate proxies, and the integration of paleoclimate data with general circulation modeling. Anchukaitis received the American Geophysical Union's Willi Dansgaard Award in 2023. He received his Bachelor's degree from Georgetown University (1998), a Master's from the University of Tennessee (2002), and his Ph.D. in Geosciences from the University of Arizona (2007). Anchukaitis previously served as a member of the U.S. National Committee for the International Union for Quaternary Research within the National Academy of Sciences.

## **Tripti Bhattacharya**

### **Member**

Dr. 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 was awarded 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.

## **Kristina Brady Shannon**

### **Member**

Kristina Brady Shannon is the Core Lab Manager and Curator at the Continental Scientific Drilling (CSD) Facility at the University of Minnesota-Twin Cities. She has expertise in the collection of lacustrine and continental core samples and best practices for sample curation. As the CSD curator she manages both the physical core samples and associated data for samples processed and stored at the facility. She is responsible for training facility users in core handling, core scanners and automated loggers, splitting, subsampling, data capture, and the use of open-source visualization software applications. She received her B.A. in geology from the College of Wooster and her M.S. from the University of Minnesota in 2006.

## **Bradley D. Cramer**

### **Member**

Dr. Bradley D. Cramer is currently Professor of stratigraphy and geochemistry in the School of Earth, Environment, and Sustainability at the University of Iowa. Dr. Cramer is an Earth system scientist specializing in stable and radiogenic isotope geochemistry, biostratigraphy, and the calibration of the Geologic Time Scale with a focus on high-resolution integrated stratigraphy of extreme biogeochemical events in Earth history. He served as the project leader of the UNESCO/IUGS International Geoscience Programme (IGCP) Project 591, founded and is the current Chair of the International Subcommission on Timescale Calibration, and is a Titular Member of the International Subcommission on Silurian Stratigraphy. He currently serves as the Chair of U.S. National Committee for Geological Sciences and is a member of the Board on International Scientific Organizations (BISO) as well as the Board on Earth Sciences and Resources (BESR) within the National Academies. Dr. Cramer received his B.S., M.S., and Ph.D. in Geological Sciences from The Ohio State University.

## **Laura Gemery**

### **Member**

Dr. Laura Gemery is a paleoecologist within the U.S. Geological Survey's Ecosystems Land Change Science Program (Ecosystems Mission Area). She specializes in paleoclimate of the Arctic by studying ostracode and foraminifera ecology and shell geochemistry to reconstruct Quaternary climate variability. Since 2009 she has participated in 9 research expeditions in the Arctic Ocean to collect surface and sediment core samples for her research. She is interested in understanding ecological impacts on the benthic environment from modern climate change. Her interest is not only in small organisms living on the sea floor, but connections to other species and their responses to past and present climate change. She believes that long-term data archived in paleo-records holds valuable lessons for the future, and that making climate data centralized and easily available from all disciplines will help advance and strengthen our understanding changes in Earth systems past and present. She received her PhD in environmental science from the University of Maryland.

## **K. Halimeda Kilbourne**

### **Member**

Dr. K. Halimeda Kilbourne is an Associate Research Professor at the University of Maryland Center for Environmental Science. She is a paleoclimatologist and paleoceanographer who has an interest in patterns of extreme events and Atlantic climate variability, especially the connections between large-scale ocean circulation and climate on interannual to centennial timescales. Her research portfolio includes reconstructions of past tropical cyclone histories and research on tsunami deposits in the Caribbean. Dr. Kilbourne facilitated research on Atlantic Meridional Overturning Circulation (AMOC) as the lead of the national Paleo-AMOC working group, part of the US CLIVAR AMOC Science Team. She is the recipient of the 2023-2024 Elkins Professorship for Academic Transformation through the University System of Maryland. Dr. Kilbourne earned her B.A. in geology from Smith College and M.S. and Ph.D. degrees in Marine Science at the University of South Florida College of Marine Science.

## **Isabel P. Montañez**

### **Member**

Dr. Isabel Patricia Montañez is a Chancellor's Leadership Distinguished Professor in the Department of Earth and Planetary Sciences at the University of California, Davis, and serves as Director of the UC Davis Institute of the Environment. Her research focuses on reconstructing past perturbations to global carbon cycling and regional climate change, in particular during periods of warming and major transitions. Montañez is a member of the National Academy of Sciences, a fellow of the American Association for the Advancement of Science, The American Geophysical Union, The Geochemical Society, European Society of Geochemistry, The Geological Society of America, the California Academy of Sciences, and a past Fellow of the John Simon Guggenheim Memorial Foundation. She is a recipient of the Arthur L. Day Medal, Jean Baptiste Lamarck Medal, and Francis J. Pettijohn Medal. Montañez received a B.S. in geoscience from Bryn Mawr College in 1981 and Ph.D. from Virginia Polytechnic Institute in 1990. Montañez currently serves as chair of the National Academies Board of Earth Sciences and Resources.

## **Nora M. Nieminski**

### **Member**

Dr. Nora Nieminski manages the Alaska State Geological Survey's Coastal Hazards Program, which conducts scientific investigations of coastal processes by studying records of extreme events related to climate change. She is also currently acting as the Geologic Hazards Section Chief. In her previous position, Dr. Nieminski was a research geologist at the U.S. Geological Survey where she investigated offshore paleorecords of earthquakes and sediment routing into the Cascadia subduction zone. Dr. Nieminski has expertise in sedimentary geology, stratigraphy, source-to-sink sediment transport, coastal and marine depositional systems, and linking the stratigraphic record to geologic hazards. She specialized in interpreting the geologic record as a recorder of hazardous or extreme events such as earthquakes, floods, and other climatic events. Her research experience ranges from extreme climatic conditions in Neoproterozoic time (i.e. Snowball Earth >600 million years ago) to present day earthquakes, floods, and storm events. Dr. Nieminski is an Alaska Commissioner appointed Advisory Board Member for the Oil Spill Recovery Institute and serves in nominated positions as the Alaska Geospatial Council Coastal & Oceans Working Group Chair, an Alaska Water Level Watch Steering Committee Member, and a National Weather Service Ready Nation Ambassador. Dr. Nieminski received her B.S. in Environmental Geoscience and B.A. in French from University of Utah and her Ph.D. in Geological & Environmental Sciences from Stanford University. After completing her doctorate, Dr. Nieminski worked with the Monterey Bay Aquarium Research Institute as a post-doctoral researcher and then as a Research Geologist at the U.S. Geological Survey Pacific Coastal & Marine Science Center, in the Coastal and Marine Hazards and Resources Program.

## **Michelle Penkrot**

### **Member**

Dr. Michelle Penkrot is currently the Curator of the Gulf Coast Repository (GCR) at Texas A&M University. At the GCR, Dr. Penkrot manages the Scientific Ocean Drilling (Deep Sea Drilling Project, Ocean Drilling Project, Integrated Ocean Drilling Program and International Ocean Discovery Program) core collection. Her expertise is in management and oversight of geologic collections. Dr. Penkrot received a PhD in geology from the University of Florida, with a research focus in glacial marine sedimentology. She received a B.S. in geology and marine science from the University of Miami.

## **John W. Williams**

### **Member**

Dr. John (Jack) Williams is Professor in the Department of Geography and a core faculty member in the Center for Climatic Research (CCR) at the University of Wisconsin-Madison. He has previously served as Chair of Geography and Director of CCR. Prof. Williams studies ecosystem responses to climate changes, using the end of the last ice age as a model system and working at local to global scales. Research themes include novel climates and ecosystems, abrupt changes in ecological systems, and the causes and consequences of past extinctions. He currently serves as Chair of the Executive Committee for the Neotoma Paleoecology Database and secretary of the Earth-Life Consortium. Dr. Williams also serves as the Chair of the US National Committee for INQUA and is past president of the American Quaternary Association. Awards include Fellow of the Ecological Society of America and Kellett and Romnes Fellow at UW-Madison. Dr. Williams received his PhD in 1999 from the Department of Geological Sciences at Brown University and BA in Geology in 1993 from Oberlin College. He currently serves as NASEM/BISO Chair of the US National Committee for the Quaternary.