

# QR | QUATERNARY RESEARCH



## EDITORS

Derek B. Booth  
Nicholas Lancaster  
Lewis A. Owen



CAMBRIDGE  
UNIVERSITY PRESS

# QUATERNARY RESEARCH

## SENIOR EDITORS

Derek B. Booth  
Nicholas Lancaster  
Lewis A. Owen

## ASSOCIATE EDITORS

Patrick J. Bartlein, Robert Booth, Louisa Bradtmiller, Aaron Diefendorf, John Dodson, Tyler Faith, Jaime Fucugauchi, Vance T. Holiday, Kathleen Johnson, Terri Lacourse, Pete Langdon, Thomas Lowell, Curtis W. Marean, Barbara Mauz, James O'Connor, Michael A. O'Neal, W. Wyatt Oswald, Jeff Pigati, James Shulmeister, Ashok K. Singhvi, Xiaoping Yang

## EDITORS EMERITI

A. Lincoln Washburn  
Estella B. Leopold  
Stephen C. Porter  
Eric J. Steig  
Alan R. Gillespie

## MANAGING EDITOR

Karin Perring

Quaternary Research Center  
Box 351360  
University of Washington  
Seattle, WA 98195-1360

## GUEST EDITORS FOR LOESSFEST ISSUE

Randall J. Schaetzl and E. Arthur Bettis III

## EDITORIAL BOARD

### ZHISHENG AN

Institute of Earth Environment, Chinese Academy of Sciences  
*Quaternary geology, monsoon and global change, dust and aerosols*

### GAIL ASHLEY

Rutgers University  
*Paleoenvironments, paleohydrology of springs, wetlands and rivers, geoarchaeology*

### JULIE BRIGHAM-GRETTE

University of Massachusetts  
*Stratigraphy, sedimentology, chronology of Arctic climate and sea level*

### JOHN DODSON

Institute of Earth Environments, Xi'an, China  
*Australia, Pacific Islands, China, vegetation history, human impacts*

### YEHOUDA ENZEL

Hebrew University of Jerusalem  
*Desert geomorphology, palaeohydrology of lakes and streams*

### DAVID FINK

Australian Nuclear Science and Technology Organisation  
*Cosmogenic dating*

### SHERI FRITZ

University of Nebraska-Lincoln  
*Paleoclimate, paleolimnology, diatom ecology of North and South America*

### ALAN R. GILLESPIE

University of Washington  
*Glacial geology, paleoclimate, megafloods, Central Asia*

### LISA GRAUMLICH

University of Washington  
*paleoclimatology, paleoecology, climate change, mountain ecosystems*

### DONALD K. GRAYSON

University of Washington  
*Archeology and vertebrate paleontology: North America and Western Europe*

### RICHARD G. KLEIN

Stanford University  
*Human origins, Quaternary paleontology*

### MELANIE LENG

British Geological Survey,  
University of Nottingham  
*Stable isotope geochemistry, climate and environmental change*

### DANIEL R. MUHS

U.S. Geological Survey  
*Quaternary sea level history, Eolian stratigraphy, soils North America, Pacific, Atlantic, and Caribbean Islands*

### COLIN V. MURRAY-WALLACE

University of Wollongong  
*Coastal evolution, neotectonism, geochronology, Quaternary sea-level changes*

### JAY QUADE

Department of Geosciences,  
University of Arizona  
*geochemistry, paleoclimatology, Quaternary geology*

### MARIA SOCORRO LOZANO-GARCIA

Universidad Nacional Autónoma de México  
*Tropical paleoecology, paleoclimatology, human impact on ecosystems*

### CATHY L. WHITLOCK

Montana State University  
*Paleoecology and vegetation history: North and South America*

### YURENA YANES

University of Cincinnati  
*Isotope geochemistry, paleoclimatology, Quaternary mollusks, taphonomy, paleoecology*

### LIPING ZHOU

Peking University  
*Land-sea correlation, loess, geochronology, geomorphology, Central Asia, East Asia*

*Cover photo.* Aeolian Quaternary loess and Late Miocene–Pliocene Red Clay at Shilou section on the eastern Chinese Loess Plateau, North China. The climate and environment of the Shilou area are dominated by seasonal reversal of Asian winter monsoon (AWM) and Asian summer monsoon (ASM) circulations, with a mean annual temperature of ~9°C and mean annual precipitation of ~500 mm. The aeolian Shilou Red Clay provides an important archive of the tectonic- to orbital-timescale variability of the Asian monsoon during the Late Miocene–Pliocene. A substantial ASM precipitation increase across the Miocene–Pliocene transition was suggested by its mineral magnetic and lithological records. Photo: Yong Xu (See the article by Ao et al., pages 619–628, in this issue).