



ICDP Workshop
Probing Continental Climate of the Late Paleozoic Icehouse-Greenhouse Transition
Norman, Oklahoma, 7-10 March, 2019

The tectonic, climatic, and biotic events of the Permian are amongst the most profound in Earth history. Global orogeny leading to Pangaeian assembly culminated by the middle Permian, and extended along the equator from the Variscan-Hercynian system (east) to the Ancestral Rocky Mountains (west). Earth's penultimate global icehouse peaked in the early Permian, and transitioned to a full greenhouse by the late Permian, archiving the only example of icehouse collapse on a vegetated Earth. The Permian atmosphere archives amongst the lowest CO₂ and highest O₂ of the Phanerozoic. Fundamental shifts occurred in atmospheric circulation, manifested in a global megamonsoon and anomalously arid tropics.

We seek to elucidate paleoclimatic conditions and forcings through the Permian by acquiring continuous core in continental lowlands and adjacent uplands. Locales in the U.S. and France archive the western and eastern termini of the Pangaeian equator, and form potential drilling sites. Auxiliary topics include the nature and character of the microbial biosphere, Mars-analog conditions, and exhumation of source regions. This project connects the dusty climates of the late Paleozoic and the late Cenozoic, North America with Europe, and the Earth with Mars— all potent themes for international collaboration on research and outreach.

An ICDP workshop will be held in Norman, Oklahoma, March 7-10, 2019 to develop scientific and logistical plans for coring Permian records in Oklahoma and Western Europe. The workshop will include summaries of the tectonic and paleogeographic settings of these sites, presentations on climatic and environmental issues of the Permian, and key questions; articulation of both primary and auxiliary scientific objectives of a deep drilling project; and a discussion of scientific collaboration and responsibilities, potential drill sites, operations, outreach, logistics, funding and permitting. The workshop outcome will include a draft science plan that will be used in preparing a proposal on Scientific Drilling of the Continental Permian record.

We invite members of the international community interested in scientific drilling of the continental Permian to attend this workshop. Interested applicants should prepare a

- a) 1-page CV that lists contact details, education and appointments, and selected key publications, and
- b) 1-page summary of your interests and intended contribution to the project.

Merge these into a single PDF file and email to the workshop organizer by January 1, 2019 (Lynn Soreghan, University of Oklahoma, Norman, Oklahoma, LSOREG@ou.edu). Selected participants will be informed by mid-January, and costs will be covered as far as possible by workshop funds. Preference will be given to scientists from ICDP member countries, early-career scientists, and to scientists whose expertise and interests complement that of current project participants.