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Sustainability Seminar Series, 2020

Feb 18th, 4:00 PM - 5:00 PM

Arctic Ice and the Ecological Ascent of the Dinosaurs

Paul E. Olsen
Columbia University

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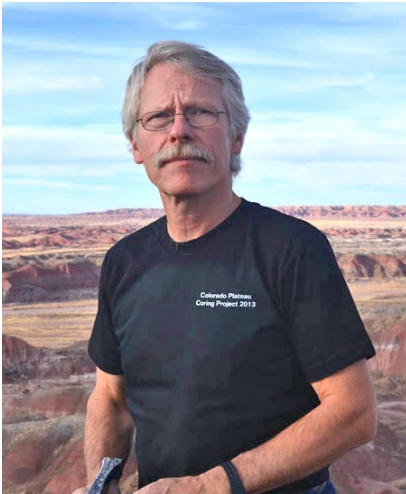
MONTCLAIR STATE
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The Doctoral Program in Environmental Science & Management
and MSU Sustainability Seminar Series Present:

Arctic Ice and the Ecological Ascent of the Dinosaurs

WHEN: Month day, 4:00 pm WHERE: CELS 120 lecture hall

Dr. Paul E. Olsen
February 18, 2020



Paul Olsen is a paleontologist and stratigrapher. He received a BA in Geology in 1978 and an M. Phil. and Ph.D. in Biology in 1984 at Yale University. His interests and research projects examine patterns of evolution and extinction as a response to and cause of climate change over geological time, especially in continental ecosystems from the age of the dinosaurs. Dr. Olsen is currently Storke Memorial Professor of Earth and Environmental Sciences at Columbia University at Lamont Doherty Earth Observatory. A member of the National Academy of Sciences, he was awarded the Thomas Jefferson Medal for Outstanding Contributions to Natural Science in 2015.

Despite the extremely high levels of atmospheric CO₂ (+2000 ppm) in the Late Triassic and earliest Jurassic (~232-199 million years ago), there is evidence of seasonally freezing conditions in the Arctic of that time. This evidence consists of abundant ice-rafted debris in lake sediments. Based on phylogenetic bracket analysis, dinosaurs at this time were insulated, and could take advantage of the rich Arctic deciduous and evergreen vegetation, even under freezing winter conditions. Transient volcanic winters caused by the eruptions of the Central Atlantic Magmatic Province led to a mass extinction at 201.6 million years ago, at the close of the Triassic, that decimating all medium- to large-sized non-dinosaurian, uninsulated animals on land. In contrast, the insulated dinosaurs, already adapted to cold temperatures, not only survived but underwent a rapid adaptive radiation and ecological expansion in the Jurassic, taking over regions formerly dominated by large uninsulated reptiles.

For more information contact Dr. HOST NAME at HOST MSU ID@mail.montclair.edu