Institute of Paleobiology PAS Seminar

The Rise of Placental Mammals: Dissecting our Evolutionary Radiation after the End-Cretaceous Mass Extinction

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Graphics by Todd Marshall from the book "The Rise and Reign of the Mammals"

10:00 (local time in Warsaw) Online webinar on zoom join here: bit.ly/3KUbimC



Short abstract: Mammals originated alongside dinosaurs during the Mesozoic, but for more than 150 million years remained mostly small as they lived in the shadows. After an asteroid impact caused the end-Cretaceous mass extinction 66 million years ago, some mammals survived, and in the aftermath, one particular group of mammals proliferated: placental mammals, those like us that are capable of giving birth to large, well-developed babies. In this talk, I will review the work of the PalM Team, based at the University of Edinburgh, which is studying the early radiation of placental mammals. I will discuss our fieldwork in the Paleocene of New Mexico, which is discovering fossils of some of the oldest placentals, our work on the phylogenetic relationships of early placentals, computed tomography (CT) data that shows how the large brains of today's placental mammals developed over time, and data from tooth histology and geochemistry that pinpoint the origin of long pregnancies and the birth of large babies in the placental lineage. Our work shows that the early history of placentals emphasized the development of large body sizes before increases in brain size, and that large bodies were enabled by the longer gestation of babies in the womb.