

Alberta Palaeontological Society

The Yahatinda Formation of Alberta and the complex landscape of early Devonian vertebrate communities in western North America

Speaker: Dr. Jason Pardo

Location: In-Person Presentation

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Abstract:

Most vertebrate palaeontology in Alberta focuses on our phenomenal Mesozoic and Cenozoic fossil records, and particularly on our world-class fossil record of dinosaurs and other Mesozoic reptiles. However, Alberta also has a phenomenal Palaeozoic record, which is primarily exposed in the Canadian Rockies. The oldest vertebrates from Alberta are from a series of sandstones, evaporites, and conglomerates that sit at the base of the Devonian and which have been called the Yahatinda Formation and assigned to the early Late Devonian. I will discuss historical and current research on the Yahatinda units, including substantial and informative new collections of vertebrates from the Canadian Rockies west of Calgary, including jawless fishes, placoderms, and sarcopterygians, including the early representatives of the lineage leading to tetrapods. These new finds provide strong evidence against a unified Yahatinda Formation, and in favour of an Early Devonian age for the Bow Valley vertebrate sites, comparable with well-known sites from the American Rockies, such as Beartooth Butte and Cottonwood Canyon. Further, these new finds suggest greater connectivity between the Rocky Mountain faunas and similarly-aged faunas in the Baltic and European Arctic regions, as well as unique faunal components indicative of faunal exchange with Australia and South China.

Biography:

Jason Pardo grew up in Pittsburgh, Pennsylvania. He completed his Bachelors in Environmental, Population, and Organismal Biology from University of Colorado in 2007. He completed his MSc at University of Calgary in 2014, where he studied the anatomy and evolutionary origins of early burrowing tetrapods. He defended his PhD at University of Calgary in 2021, studying metamorphosis in the axolotl salamander. He has worked as a Banting Fellow and an NSF Postdoctoral Fellow at the Field Museum of Natural History in Chicago, Illinois, and is currently a Research Council of Lithuania Postdoctoral Fellow at Vilnius University. His research interests are broad and include the origin and early evolution of tetrapods as well as broader palaeoecology and biogeography of vertebrate ecosystems in the Late Palaeozoic.