M.Sc. or Ph.D. Student—Synchrotron imaging of Saskatchewan amber inclusions.

We are seeking a highly motivated and well-qualified graduate student to conduct research on the organisms captured in Cretaceous age amber deposits from Saskatchewan, particularly within the Big Muddy Badlands. Amber from this time interval offers a chance to examine how forests and their insect inhabitants responded to the end-Cretaceous extinction event, and to fill a longstanding gap in the fossil record of insects. Our research will make use of synchrotron imaging to create 3D models and chemical maps of fossils in amber. In addition to discovering new species, this work will investigate specimen colour, preservation, and skeletal reinforcement, to gather information on ancient adaptations. Due to the breadth of this project, there is potential to accommodate individual student interests, but the appropriate candidate will have an excellent academic record, an understanding of either biological systematics or physics, and be willing to conduct both field and lab work in addition to data analyses. Experience with techniques such as the development of computer algorithms for data analysis, microscopy, photography, biomedical imaging, or chemical analyses are beneficial, but are not required.

This project is a collaboration between the University of Regina, the University of Saskatchewan, and the Royal Saskatchewan Museum. The student will be co-supervised by Dr. Ryan McKellar (Palaeontology, RSM, https://royalsaskmuseum.ca/rsm/research/palaeontology/ryan-mckellar) and Dr. Mauricio Barbi (Physics, U. of R., http://uregina.ca/~barbi/); some of the analytical work will take place at the Canadian Light Source Synchrotron, and within the laboratory of Dr. David Cooper (Anatomy and Cell Imaging, U. of S., www.cooperlab.ca/). Graduate students must meet the entrance requirements set out by the University of Regina Physics Department and Faculty of Graduate Studies. Ideally, we wish to start this project in the spring or fall of 2020. **Applications will be assessed during the third week of January, and the successful candidate will be funded by the RSM Scholarship.** To apply, please request that two reference letters are sent along with a cover letter, CV and unofficial copies of academic transcripts to ryan.mckellar@gov.sk.ca and barbi@uregina.ca.