

Research Led by Macalester Professor Kristi Curry Rogers Reveals New Insights into the Lives of Baby Dinosaurs

St. Paul, Minn. – Research led by Macalester College Professor Kristi Curry Rogers published in *Science* sheds the first light on the life of a baby *Rapetosaurus*, whose 67-million-year-old fossil bones were found in Madagascar. The work was funded by the National Science Foundation.

Long-necked sauropod dinosaurs were some of the biggest animals ever to walk on land, yet they hatched from eggs no bigger than a soccer ball. With a dearth of fossils from the youngest sauropods, the earliest lives of these giants were a mystery.

A beautifully preserved partial skeleton, so small that its bones were originally mistaken for those of a fossil crocodile, allowed Curry Rogers and her colleagues to determine that this little *Rapetosaurus* was just a few weeks old, 35 cm tall, and weighed about 40 kilograms when it succumbed to drought in its Cretaceous ecosystem.

“When we find sauropod bones, they are usually big,” said Curry Rogers. “Even juveniles can be bigger than cows. This is our first opportunity to explore the life of a sauropod just after hatching, at the earliest stage of life.”

Along with her colleagues, Macalester alumna and University of Washington graduate student Megan Whitney, Professor Mike D’Emic of Adelphi University, and researcher Brian Bagley of the University of Minnesota, the team studied thin-sections of some bones under a microscope. They also utilized a high-powered micro-CT scanner to get a closer look at the insides of bones. The detailed microscopic features of fossil bones reveal patterns of organization similar to those of living animals, and make it possible for paleontologists to reconstruct the history of life in extinct animals.

“We looked at the preserved patterns of blood supply, growth cartilages at the ends of limb bones, and at bone remodeling,” said Curry Rogers. “These features indicate that *Rapetosaurus* grew as rapidly as a newborn mammal.”

In addition, these microscopic features and bone proportions support the idea that *Rapetosaurus* was precocial, meaning that it was mobile from hatching and less reliant on parental care than some other animals.



Composite illustration created by Anthony Morrow. Baby *Rapetosaurus* sculpture by Tyler Keillor; photo of Malagasy girl by Ella Glass

[Download](#)

<http://d2ihvqrbsd9p9p.cloudfront.net/contentAsset/raw-data/43206559-3178-4357-b4b0-5fa18e0e4d59/image1>

The scientists were also able to observe microscopic areas deep within the bones, which indicate the time of hatching and allowed them to estimate the size of a newly hatched *Rapetosaurus*.

“Baby *Rapetosauruses* were around five pounds when they hatched,” said Curry Rogers. “From there, they were on their own, foraging and making their way – or not – in a pretty tough ecosystem.”

“Precocity in a Tiny Titanosaur from the Cretaceous of Madagascar”

Authors: Kristina Curry Rogers¹, Megan Whitney², Michael D’Emic³, Brian Bagley⁴

Affiliations:

¹Biology and Geology Departments, Macalester College, St. Paul, Minnesota 55105 U.S.A.

²Department of Biology, University of Washington, Seattle, Washington 98185-1800, U.S.A.

³Biology Department, Adelphi University, Garden City, New York 11530-0701, U.S.A.

⁴Department of Earth Sciences, University of Minnesota, Minneapolis, Minnesota 55455-1333, U.S.A.

Macalester College, founded in 1874, is a national liberal arts college with a full-time enrollment of 2,138 students. Macalester is nationally recognized for its long-standing commitment to academic excellence, internationalism, multiculturalism, and civic engagement. Learn more at macalester.edu.

April 21 2016

- [About Macalester \(http://www.macalester.edu/about/\)](http://www.macalester.edu/about/)
- [Academics \(http://www.macalester.edu/academics/\)](http://www.macalester.edu/academics/)
- [Admissions & Financial Aid \(http://www.macalester.edu/admissions/\)](http://www.macalester.edu/admissions/)
- [Life at Mac \(http://www.macalester.edu/lifeatmac/\)](http://www.macalester.edu/lifeatmac/)
- [Support Mac \(http://www.macalester.edu/supportmac/\)](http://www.macalester.edu/supportmac/)