

Abstract Submitted
for the OSS17 Meeting of
The American Physical Society

Embryonic metabolism in ornithischian dinosaurs and implications for calculations of dinosaur egg incubation times. SCOTT LEE, University of Toledo — The embryonic metabolisms of the ornithischian dinosaurs *Protoceratops andrewsi* and *Hypacrosaurus stebingeri* have been determined and are in the range observed in extant reptiles. The average value of the measured embryonic metabolic rates for *P. andrewsi* and *H. stebingeri* are then used to calculate the incubation times for twenty-one dinosaurs from both Saurischia and Ornithischia using a mass growth model based on conservation of energy. The calculated incubation times vary from about 70 days for *Archaeopteryx lithographica* to about 180 days for *Alamosaurus sanjuanensis*. Such long incubation times seem unlikely, particularly for the sauropods and large theropods. Incubation times are also predicted with the assumption that the saurischian dinosaurs had embryonic metabolisms in the range observed in extant birds.

Scott Lee
University of Toledo

Date submitted: 06 Apr 2017

Electronic form version 1.4