

# Paleontologists learning more about dinosaurs with virtual reality

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The fossil used to develop digital dinosaur. Credit: Wyoming Dinosaur Center

A key piece of evidence proving how dinosaurs evolved into modern-day birds could soon be studied across the world.

University of South Florida biology professor Ryan Carney, PhD, MPH, MBA, has created interactive holograms of dinosaurs, including the Archaeopteryx, which is believed to be the missing link in understanding the origin of birds and flight. Only 12 fossils have been discovered, all in Germany.

Dr. Carney digitizes these fossils using X-ray, lasers and photogrammetry, then brings them "back to life" with computer animation. Using [virtual reality](#) and augmented reality, paleontologists and students could interact with the [dinosaurs](#) in 3D, allowing them to better understand their anatomy and motion without having to travel to a museum.

These technologies are also integrated into Dr. Carney's Digital Dinosaurs course at the University of South Florida's Center for Virtualization & Applied Spatial Technologies (CVAST) and Integrative Biology Department. Students use the same techniques to visualize, animate, and 3D print specimens for research and educational purposes, helping foster enthusiasm for STEM fields.

His work is so groundbreaking, the National Geographic Society just named Dr. Carney to the 2017 class of "Emerging Explorers," granting him \$10,000 for research and exploration. This [prestigious award](#) recognizes those who are already making a difference and changing the world. He is the first faculty member at the University of South Florida to receive this honor.



The *Archaeopteryx* is digitized to help paleontologists and students study how it evolved without having to travel to a museum. Credit: Ryan Carney

Provided by University of South Florida

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