

BROADCAST-OSF Innovation brings VR beating hearts to life for safer surgeries

ANCHOR LEAD-IN:

A new breakthrough from OSF Innovation is helping heart surgeons see something they've never seen before — a patient's heart beating in 3D. It's called the "4D Heart," and it could be a game-changer for how complex heart surgeries are planned.

VO or Radio Package

Imagine getting ready for heart surgery and being able to watch your patient's heart beat, virtually, before ever stepping into the operating room.

SOT – Dr. Matthew Bramlet

"Have you ever seen a flip book where you see a drawing move? That's what we're doing with these 3D models in a digital, virtual space." Dr. Bramlet explains, "We're just turning them off and on in rapid succession until we have that beating heart." (:13)

It's called the *4D Heart*. Unlike traditional 3D models that show just one moment in time, this technology captures the full cardiac cycle, showing how the heart beats and changes with every contraction.

The heart of this innovation? A digital twin created from CT scans and powered by AI. Developed at the Advanced Imaging and Modeling Lab at OSF Innovation, it started as a manual process taking months but now it's automated, so the conversion is done with a single click.

Surgeons can now visualize movement. That's critical for conditions like hypertrophic cardiomyopathy or valve disease. In some cases, these models have even changed how surgeons approach the operation.

For now, the work is supported through research grants — including the Jump ARCHES program — but Dr. Bramlet says it's only a matter of time before this becomes part of routine care.