Researchers at the University of South Florida have designed a teaching tool for navigating complex cardiac surgical procedures. Through the development of a three dimensional (3D) model of the heart, this device can assist surgeons in preparation for medical treatment.

Congenital heart defects are the malformations of the blood vessels, walls or chambers of the heart present at birth. Invasive procedures are required to treat the malformations, and surgical complications can be common in the correction of some of these defects. These complications can be reduced with the use of prototypes or 3D models of the heart to give surgeons a clearer concept of the particular abnormality prior to surgery.

Our inventors have devised a technology that features accurate, realistic models of the human heart. The process generally entails acquiring, constructing, and combining a set of images for the organ. The images are then used to generate a 3D model that is printed using raw material that resembles and feels like a heart. This anatomical 3D model reference has potential for reducing surgical training time as it allows the surgeon to decide how to go about the surgery as well as predict the risks of complication that may arise.

ADVANTAGES:
- Reduces surgical training time
- Accurate, realistic model of the heart
- Uses raw material that resembles or feels like a heart

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