

News Release

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3D Systems Extends Patient-Specific 3D Modeling and Printing Service to Aid Cardiology Procedures

- New pliable MultiJet Printing material mimics patient physiology, enabling realistic practice of cuts, sutures and grafts
- Full-color models assist with pre-surgical planning and medical education

ROCK HILL, South Carolina, November 10, 2016 – [3D Systems](#) (NYSE:DDD) announced today the extension of the company's anatomical modeling service to include a pliable MultiJet Printing (MJP) material for its patient-specific 3D modeling and printing service. As part of 3D Systems' advanced end-to-end medical 3D printing solutions, this 3D modeling and printing service is designed to aid the planning of procedures for patients with critical congenital heart defects (CHD) requiring surgical intervention. CHDs are the most common birth defect, affecting approximately 12 of every 1000 live births (1).

3D Systems' cardiac 3D modeling and printing service uses radiographic imaging data to create an accurate digital representation of the patient's heart, which is then 3D printed using either ColorJet Printing (CJP) or MultiJet Printing (MJP). Each of these technologies offers a deeper understanding of a different aspect of the patient's anatomy. The



3D Systems' cardiac 3D modeling and printing service delivers patient-specific anatomical models in full-color or pliable materials for medical education, planning and practice.

full-color CJP models color-code the patient's heart structures to assist communication during physician consultations, and the new MJP models enable pre-surgical planning and surgical rehearsal using a pliable material that mimics the patient's anatomy and can be cut, sutured and grafted. 3D Systems' MJP technology allows the entire heart to be 3D printed in one piece while maintaining an accurate representation of internal organ structures.

A video showcasing 3D Systems CJP and MJP heart models is available [here](#).

"We have been collaborating with 3D Systems on the design and printing of cardiac 3D models for a few years now," said Shafkat Anwar, MD, Cardiology Director, Cardiac MRI Program, The Heart Center, St. Louis Children's Hospital, Assistant Professor of Pediatrics, Division of Pediatric Cardiology, Washington University in St. Louis School of Medicine. "Our cardiothoracic surgeons routinely use 3D printed models for precise pre-surgical planning, and have found these models helpful for complex cases. The models are also regularly used in our institution for trainee education and for counseling patients and their families. More recently, we have incorporated flexible 3D printed models into our pre-surgical 'dataset' and use both the flexible and rigid multicolor models for surgical planning. We have been consistently impressed by the high level of technical expertise of 3D Systems' team, and the surgical models have proven accurate to the anatomy encountered in the operating room."

3D Systems' cardiac 3D modeling and printing service is part of the company's extensive cardiovascular offerings. 3D Systems' complete line of cardiovascular products will be on display in booth #1752 at the American Heart Association Annual Meeting in New Orleans, LA, November 13 – 15.

For more information on 3D Systems' healthcare applications and offerings, contact healthcare@3dsystems.com.

Reference:

(1) <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3721933/>

About 3D Systems

3D Systems provides comprehensive 3D products and services, including 3D printers, print materials, on-demand manufacturing services and digital design tools. Its ecosystem supports advanced applications from the product design shop to the factory floor to the operating room. 3D Systems' precision healthcare capabilities include simulation, Virtual Surgical Planning, and printing of medical and dental devices as well as patient-specific surgical instruments. As the originator of 3D printing and a shaper of future 3D solutions, 3D Systems has spent its 30 year history enabling professionals and companies to optimize their designs, transform their workflows, bring innovative products to market and drive new business models.

More information on the company is available at www.3dsystems.com