

Illinois Doctor is Building a Library of 3D Printable Hearts

BY BRITTNEY SEVENSON · MAY 13, 2014

We have seen several major stories in the past year, where doctors have been using 3D printed models of hearts, created from MRI scans. These hearts are typically life-size when printed, and allow surgeons to literally hold a replica of a patient's heart in their hands. This has proven to be an amazing tool for surgeons who are now able to get an actual 3D view of a heart and all of its defects, prior to the start of a major procedure.



Matthew Bramlett

One doctor, a pediatric cardiologist at the Children's Hospital of Illinois at OSF Saint Francis Medical Center, Matthew Bramlett, has seen first hand what these 3D printed hearts are doing within the field of cardiac surgery. He isn't a surgeon, however his job is to present surgeons with the best possible information out there, enabling them to perform intricate heart surgeries to the best of their abilities. Bramlett, who discovered the 3D printing technology in Toronto back in 2009, decided to print his first heart not too long ago.

He described to Peoria Public Radio, the implications of his first print. "We saw an additional defect, an additional hole in the heart that's notorious for going unnoticed, and it changed the surgery. So, just the trial run made a tremendous impact that day and Dr. Fortuna, the cardiothoracic surgeon, that was operating on the patient called me from the O.R. saying, 'Matt, your heart tells the truth,' and it was that moment where he said, 'This is bigger than what we ever anticipated,'" said Bramlett.

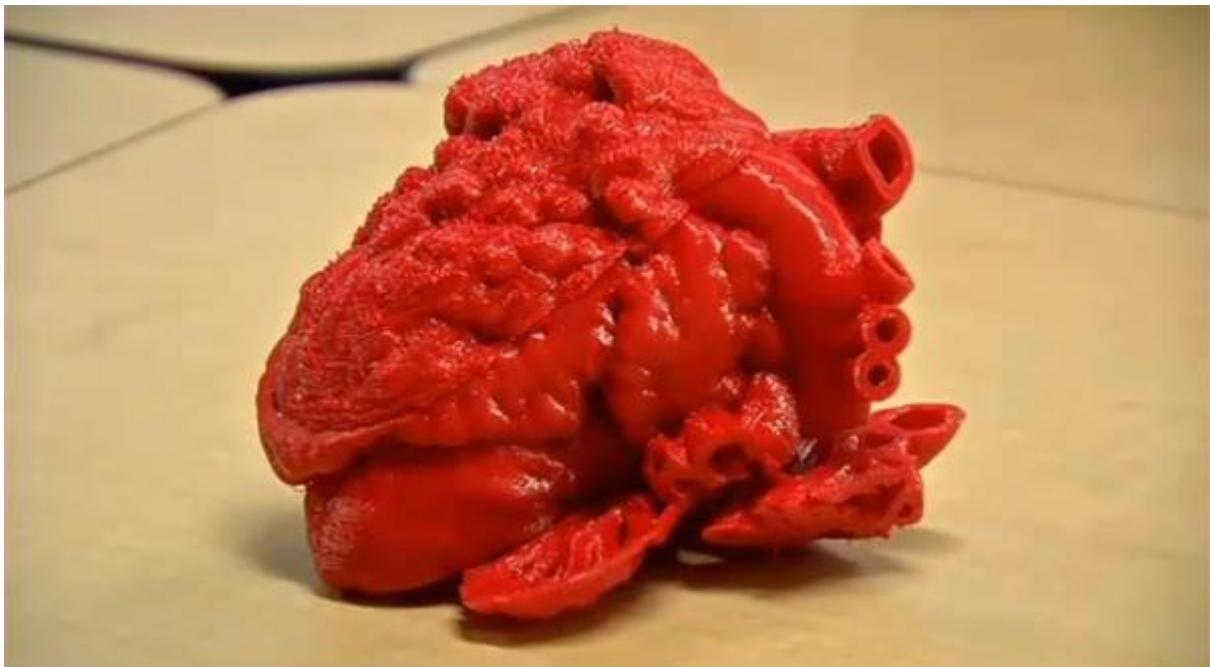
Bramlett has since become a bit obsessed with the technology. He now is trying to create a vast library of 3D printable hearts. The library will consist of a database with 3D printable scans of hearts riddled with defects. His goal is to create a database that surgeons can access in order to print out heart models with defects similar to that of their patients.

"Right now in the nation, there are a handful of pathologic libraries. These libraries have developed over the years, but the majority of these hearts were from autopsies back 50 years ago and they've been handled and used over the years and they're starting to fall apart. But they're not being replenished because of surgical advances and differences in how they're able to acquire these hearts and costs. And so, these libraries are disappearing," said Bramlett.

He is looking for as many doctors and institutions as possible to send him pre and post op CT and MRI scans of hearts from patients of any age. His heart library will be based out of the Jump Trading Simulation and heart-3Education Center in Peoria, and the images will be downloadable so that anyone with access to a 3D printer can print the heart models.

“If you have a med student who’s got a friend with a 3D printer, he can say, ‘Hey can you print this file for me? I’m really struggling with this,’ or a family that says, you know, ‘Our nephew has this; let’s see if we can find this online and print it out.’ And so the availability of that is like...it’s almost a national archive and it’s something that you don’t have to be a part of some large institution to have access to it. And that’s what we’re aiming for,” Bramlet told Peoria Public Radio.

With enough scans his library could one day be credited for saving, and bettering many lives of patients around the world. Discuss this story about Bramlet’s heart library at the 3DPB.com forum thread. If you, a doctor, or institution you may know would like to donate a scan to Bramlet’s project please use the following contact form: <http://www.jumpsimulation.org/contact>



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(Source: PeoriaPublicRadio)