Makers @ HS/HSL: Bread Slicing Human Anatomy

User:	Mohammed Quraishi
Affiliation:	Diagnostic Radiology, University of Maryland Medical Center
Project:	3D printing CAT scan slabs
Used:	Makerbot Replicator 2X

Dr. Mohammed Quraishi used the Innovation Space to prototype an idea for improving medical education that he describes as "bread slicing human anatomy". "Bread slicing" refers to 3D printing individual computerized tomography images (CAT scans) of a human body in such a way that the individual prints can be assembled into a greater whole.
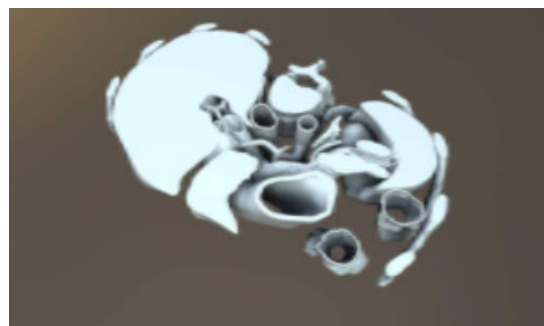
A 3D model of a "bread-slice" of the human body at the level of the celiac plexus, using NLM data, by Dr. Saad Sherif.

Dr. Quraishi sees a disconnect between the way health professionals learn anatomy in school and later evaluate anatomy in day-to-day medical practice. "Anatomy in medical practice is mainly visualized with CAT scans. However,

he explains.

When Quraishi first came to the University of Maryland, he had trouble finding a cost-effective way to print prototype 3D models for their projects. While working in the library one day, he noticed the Innovation Space and signed up to use the equipment. "Now 3D printing was easily accessible and at a price 80% cheaper [at the library] than what we were finding at commercial printers," he recalls.

Dr. Mohammed Quraishi, M.D.

Together with fellow UMMC radiologist and medical illustrator Dr. Saad Sherif, the two are working to bridge the visual disconnect by 3D printing the human body into axial slabs using CAT scan data obtained from the National Library of Medicine. After heavy post-processing of the NLM data by Sherif, Quraishi used the Innovation Space to produce an accurate 3D model of a human that looked like it went through a bread slicer. They presented their work at the New York Medical Imaging Informatics Symposium in September 2015.

3D Tech in the News

1. JHU Assistant Professor Warren Grayson gives his TED x Baltimore 2016 talk "Tissue Engineering for Regenerative Medicine".

2. "How 3D-Printed Maps Are Helping the Blind and Visually Impaired"

3. "A Combination of Various Technologies in the Fabrication of a Removable Partial Denture--A Case Study"

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- April 21, 2016
- April 28, 2016

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- May 13, 2016

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- May 05, 2016

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New to the HS/HSL Innovation Space?

The Innovation Space is designed for innovative and collaborative hands-on learning experiences. It offers three 3D printers, two 3D scanners, over 3,500 video tutorials from Lynda.com (available on-site only), a large DNA model, two molecule kits, a button maker, and a 3D printing pen. The staff provides orientations as well as workshops on a regular basis for those who are new to 3D printing and 3D scanning.

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