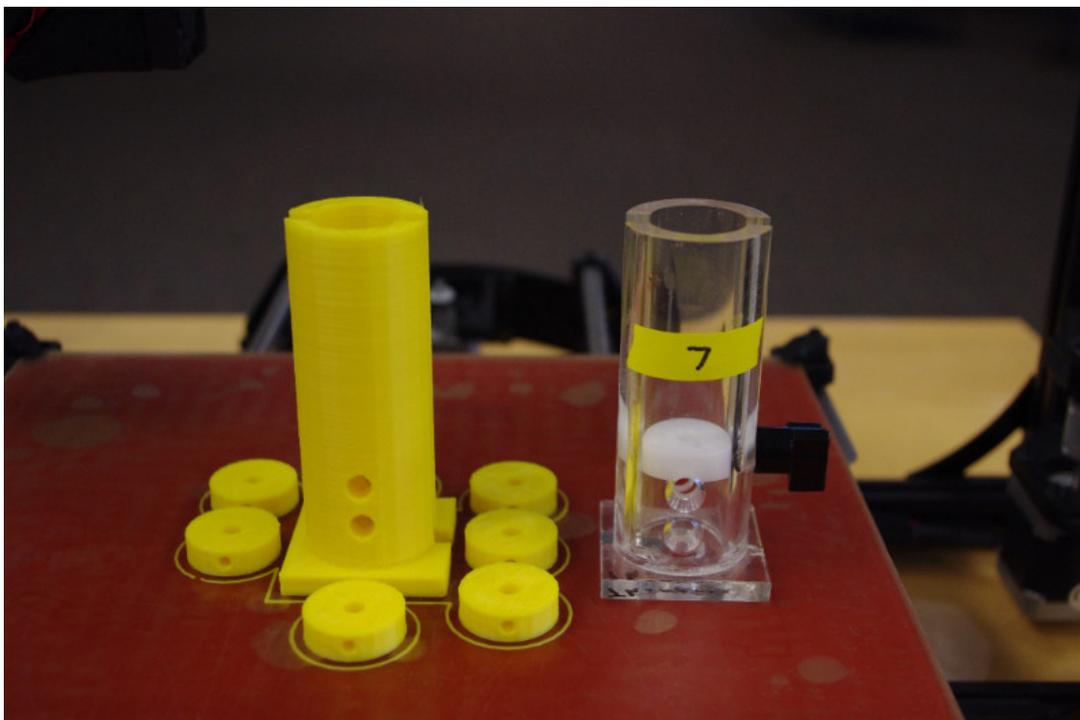


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Makers @ HS/HSL: 3D Printing Lab Equipment

User:	Maxwell Madden
Affiliation:	Department of Physiology, University of Maryland School of Medicine
Project:	Reproduce equipment used for neurophysiology research
Used:	Tinkercad and Lulzbot Taz5



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Maxwell Madden used the HS/HSL Innovation Space to reproduce equipment used for neurophysiology research. As a visiting researcher in [Dr. Scott Thompson's Lab](#) this summer, Maxwell is studying depression in female mice. The equipment that Maxwell 3D printed - chronic restraint stress tubes and stoppers - are commonly used in labs for producing mild stress in mice. The equipment wears down as mice chew through it, which can become very costly for labs who perform many of these experiments.

The aim of this research is to create better models for understanding depression in female mice than what currently exists. Such models could lead to new methods of treatment for depression that are fast acting and lack the side effects common among current treatment.

Madden learned of the library's 3D printers from a lab mate. He designed 3D models of an existing tube and stopper using a caliper and [Tinkercad](#), a free web-based CAD program. The printed replicas work as well as the conventional equipment, and plans are underway to print more.



Maxwell Madden

Madden is currently an undergraduate student at [St. Mary's College of Maryland](#) working towards a double major in psychology and biochemistry. After graduation he plans to pursue a medical science training program.

3D Tech in the News

1. [FDA Touts 3D Printing in Personalized Medicine](#) (thehill.com)
2. [3D Printing of Calcium Phosphate Ceramics for Bone Tissue Engineering and Drug Delivery](#) (nih.gov)
3. [Comparison of Three-Dimensional Printing and Vacuum Freeze-Dried Techniques for Fabricating Composite Scaffolds](#) (nih.gov)

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Did You Know?

The cost for 3D printing at HS/HSL is only \$3 for the first hour, and \$1 every additional hour of printing.



Upcoming HS/HSL Innovation Space Workshops

Introduction to 3D Printing

- August 4, 2016
- August 9, 2016

Introduction to 3D Modeling

- July 28, 2016
- August 8, 2016

[Register for our free workshops](#)

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.

For more information, visit our webpage at <http://www.hshsl.umaryland.edu/services/inspace/>.



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