

Additive Manufacturing Capabilities @ Clark School

JIM ZAHNISER
EXECUTIVE DIRECTOR
ENGINEERING INFORMATION TECHNOLOGY
<ZAHNISER@UMD.EDU>



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Additive Manufacturing History

- Some capabilities have existed embedded in various research labs for years.
- Ongoing Campus Activities around Digital Fabrication
 - JOHN AND STELLA GRAVES MAKERSPACE (LIBRARY)
 - HCIL HACKERSPACE
 - ART DEPARTMENT
 - ETC.
- Engineering Additive Manufacturing Committee Formed (03/14)
- Issued Recommendations Report Issued (07/14)



Recommendations Report

- Create Umbrella Organization

- Three Key Audiences

- ENGINEERING UNDERGRADUATES
- ENTREPRENEURIAL-FOCUSED STUDENTS
- RESEARCH-FOCUSED GRADUATE STUDENTS AND FACULTY

- Equipment and Locations Identified

- Adding Fuel to the Fire



Current Status

- Executing on Recommendation Report

- 10 MAJOR PURCHASES COMPLETED
- 6 OF 10 ON SITE

- Created Website

- [HTTP://TERRAPINWORKS.UMD.EDU/](http://TERRAPINWORKS.UMD.EDU/)

- Added 3D Printing to Freshman

Course



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On Tour

Keystone Labs

- 1st Year Engineering Students
- Location: JMP 1120&1201
- Consumer Printers
- Status: Iterating on 2nd semester
- Key Equipment:
 - (10) MAKERBOT REPLICATOR2



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On Tour

Rapid Prototyping Lab

- Entrepreneurial Focused Maker Space
- Location TAP 1102
- Status: Operational
- Key Equipment:

3D Systems CubePro
3D Systems CubeX
3D Systems Sense
Formlabs Form1
Lulzbot TAZ4
Makerbot Digitizer
Makerbot Replicator
Makerbot Replicator 2

Makerbot Replicator 2X
Stratasys Fortus 400mc
Stratasys Objet30 Pro
Ultimaker 2
Electronics bench equipment
Circuit Printing Equipment*
Design Computers
Laser Cutter*
Sewing Machine

* Planned



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Research Prototyping Lab

- Advanced Additive Manufacturing Equipment
- Location: ENG 0126
- Status: Awaiting Delivery and Installation
- Key Equipment:
 - 3D SYSTEMS PROX 200
 - STRATASYS OBJET500 CONNEX
 - NANOSCRIBE PHOTONIC PROFESSIONAL GT



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On Tour

Tissue Engineering and Biomaterials Laboratory

- Biomaterial processing
- Location: KEB 3237
- Status: Operational
- Key Equipment:
 - ENVISIONTEC 3D BIOPLOTTER
 - ENVISIONTEC PERFACTORY



University of Maryland - Energy Research Center (UMERC)

- Micro Dispensing
- Location: EGL
- Status: Delivery delayed
- Equipment:
 - NSCRYPT 3DN-450HP



TerpsRacing

- CNC Machines
- Location: JMP
- Status: Operational
- Key Equipment:
 - OKUMA – M460-VE
 - OKUMA – L200E-M



Makerbot Innovation Center

- Cloud to Local Printer Farm
- Location: TAP
- Status: On Order
- Key Equipment:
 - (32) REPLICATOR 5G
 - (12) REPLICATOR 2X
 - (2) Z18
 - (2) MINI





TERRAPIN WORKS

< umd-tw@umd.edu >