



# 4D Bio<sup>3</sup>



## 4D Bio<sup>3</sup> Program Capabilities

**4D Bio<sup>3</sup> has a wide assortment of commercially available and custom bioprinters.**

- Laser forward transfer, extrusion, and microwave techniques
- Multimodal printing
- Match material properties to cell and tissue type
- Largest multi-tool bioprinter in the world

**The 4D Bio<sup>3</sup> lab space is equipped with all the necessities and expertise for eukaryotic cell culture.**

- Differentiate into any adult cell type
- All cell types in tissue model derive from single source
- Human cell lines with normal chromosomal karyotype
- Ability to add immune component without cross-reactivity

**The 4D Bio<sup>3</sup> facility contains rapid prototyping technology for bioreactor design and fabrication.**

- Rapid prototyping
- Multi-chamber for barrier tissue testing
- Custom applications
- Biocompatible materials
- Continuous monitoring of culture conditions
- Oxygen, glucose, flow, force measurements
- Optical, electrochemical sensing

**4D Bio<sup>3</sup> utilizes electrospinning equipment, including traditional electrospinning and novel direct write technology, to create 3D tissue.**

- Printing nanofibers to form tissue structures and scaffolds
- Print rate of hundreds of lines/second
- Can print synthetic materials (e.g. polyethylene oxide) or natural materials (i.e. collagen)



[www.usuhs.edu/4dbio3](http://www.usuhs.edu/4dbio3)

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