Located on the 4th floor in the Life Science Laboratories, the Advanced Digital Design & Fabrication facility offers state-of-the-art 3-D printing and related digital manufacturing capabilities to support the translation of new technologies in biosensors and medical devices from lab bench to human testing that can then pave the way for commercialized innovative products and services. Combined with medical imaging, this technology allows rapid fabrication of models that are personalized to a patient, allowing a clinician a physical reference they can use to plan a procedure. In addition to providing services to support device prototyping and testing as a perfect complement to the Device Characterization Core.

WORK WITH US
- Research engagements
- Facility printer/lab space weekly/monthly rental
- Long-term projects
- Equipment training
- Classes and seminars

PRINTING WITH US
Printing and cutting services are available by the hour and include full technician support, or limited support for trained individuals. For details contact Dave Follette at follette@umass.edu. Our rates are competitive and tiered based on needs and usage. Visit our website at umass.edu/ials/ addfab for current listing.

PARTNER WITH US!

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A prototype of a bone cutting guide, printed at ADDFab, along with a scale model of the bone, to evaluate the initial prototype and communicate the concept.
**EQUIPMENT**

**Optomec LENS 450**
Materials: Metals (stainless steel, nickel, and others)
Build Volume: 100 x 100 x 100 mm
Print Accuracy: .25mm position, .025 mm linear resolution

The LENS 450 operates by depositing controlled amounts of metal powder onto a work surface and sintering with a laser. The approach allows the machine to be used for part repair, hybrid manufacturing, as well as full additive part manufacturing.

**EOS M290**
Materials: Metals (stainless steel, nickel, and others)
Build Volume: 250 x 250 x 325 mm
Laser: 100 micron focus diameter

The M290 uses a laser to sinter a bed of metal powder, allowing layer by layer creation of geometrically complex, high quality metal parts. Using the M290 fully functional parts can be designed to be lighter, more complex, and better integrated into an assembly.

**EOS Formiga P 110**
Materials: Polyamide or polystyrene
Build Volume: 200 x 250 x 330 mm
Layer Resolution: 0.06 mm

The Formiga P110 uses a laser to sinter a bed of plastic powder. The process facilitates the creation of batches of parts and allows complex geometries and quality builds from high strength plastic materials.

**Connex Objet 350**
Materials: Multiple proprietary plastic and rubber-like materials
Build Volume: 342 x 342 x 200 mm
Layer Resolution: 16 microns
Print Accuracy: 20—85 microns

The Object 350 allows the creation of parts with multiple materials. Materials can be printed separately or in specified ratios, offering a range of mechanical properties. Parts can be any blend of rigid and flexible materials, creating prototypes with different hardness durometers, or even soft overlays on rigid materials.

**Mark Two**
Materials: Nylon with carbon fiber, Kevlar, fiberglass
Build Volume: 320 x 132 x 154 mm

The Mark Two printer switches between two nozzles to create carbon fiber, Kevlar, or fiberglass. The resulting parts have high strength to weight ratios that can be used for tooling, fixtures, and prototyping.

**Spirit GLS**
Materials: Acrylic, wood, laser cutter
Build Volume: 40” x 24” x 7”
Thickness: Up to ¾ inch acrylic

The Spirit GLS allows rapid laser cutting and 256-level gray scale engraving. In addition to cutting potentially complex geometries in materials like wood and acrylic, it can engrave aluminum.

**TESTIMONIAL**

"The ADDFab Core has been a major help manufacturing and refining our hardware prototypes. The tools available there have dramatically decreased our turnaround for new designs, making it much easier to focus on our primary research without delays."

- Addison Mayberry, Sensors Lab, College of Information and Computer Sciences (CICS)