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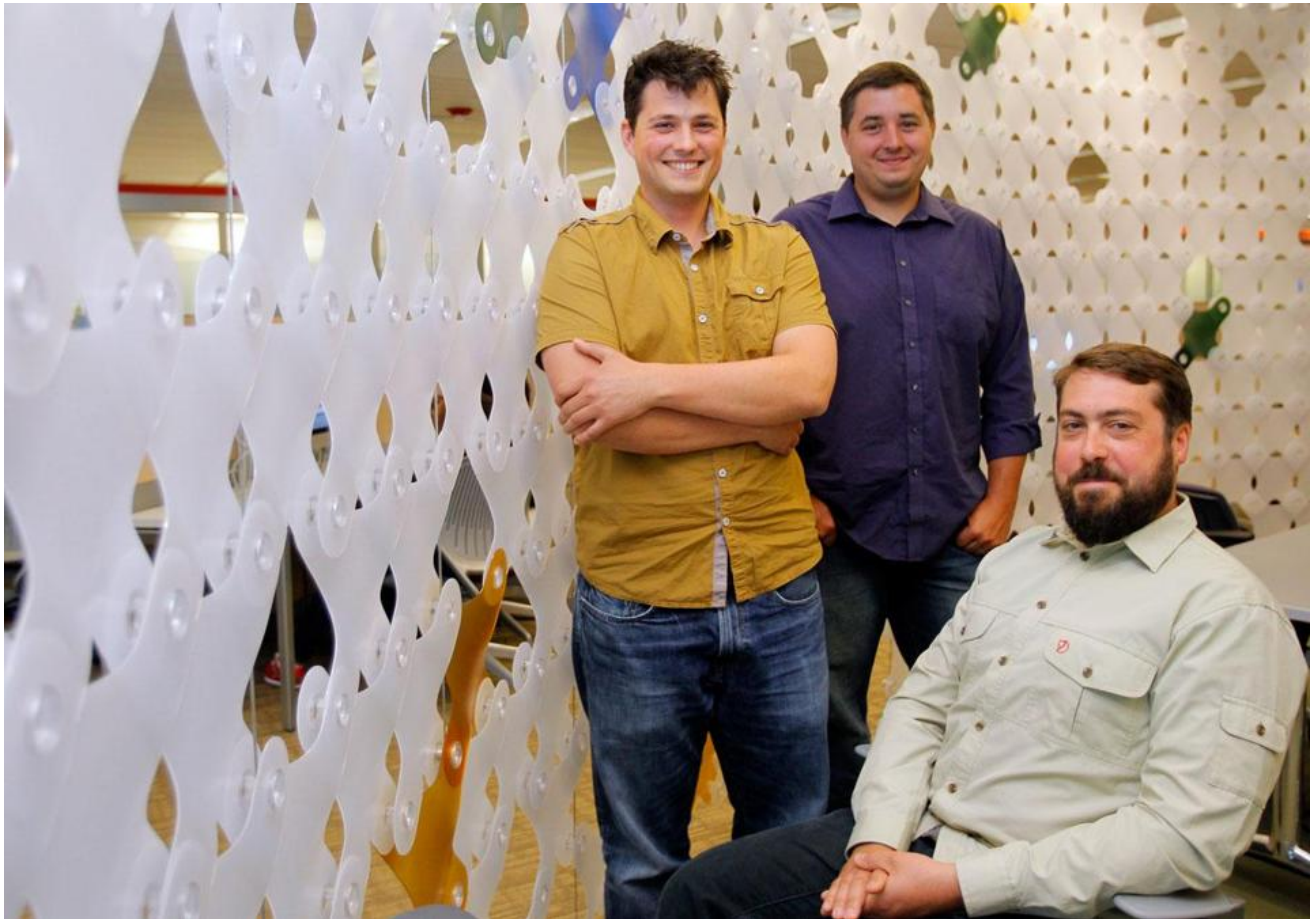
The Boston Globe

Business

Northeastern's 3-D printing lab is for all to use

New lab will let students learn the technology — as well as make stuff

By **Michael B. Farrell** | GLOBE STAFF JUNE 10, 2013



JESSICA RINALDI FOR THE BOSTON GLOBE

From left, Rich Ranky, Mark Sivak, and Janos Stone developed Northeastern University's Digital Media Commons at Snell Library.

Along with researching papers or studying for exams, Northeastern University students will soon be able to go to the library and create their own iPhone cases or dorm room lamps.

The school is opening a 3-D printing lab this fall within its library to give all students access to this trendy manufacturing technology, which has been tucked away in engineering and design labs.

“This is a technology that’s moving out there,” said Stephen W. Director, provost and senior vice president for academic affairs at Northeastern.

The ongoing evolution of 3-D printers — they are becoming smaller, cheaper, and easier to use — has prompted universities, high schools, and local governments to add these devices as their libraries push into the digital age.

The modern library, Director said, is “not just a place where you store books, and information doesn’t just come in 2-D physical forms. Information comes in all sorts of forms. Now, it’s in 3-D.”

3-D printing is really more of a manufacturing operation than traditional printing. Using special software, professionals and tinkerers alike can design objects or random shapes, and the printer creates three-dimensional versions of them by extruding successive layers of plastic filament.

Northeastern’s lab will be part of the school’s newly opened Digital Media Commons at Snell Library. The dozen or so machines will include full-size and smaller desktop printers, 3-D scanners, and laser cutters, from manufacturers such as MakerBot Industries LLC, whose Replicator 2 printer costs about \$2,000.

Many universities are ordering them, said Jenifer Howard, a spokeswoman for New York-based MakerBot. Overall demand for the printers has been so high that MakerBot opened a second factory last week. So far, it has sold more than 20,000 MakerBots, which are small enough to sit on a desk.

Although students at Northeastern will be able to experiment with designing all kinds of objects that can be printed in its lab, the project is not intended just to feed growing student curiosity. It is also meant to expose them to a fast-spreading technology that is showing up more and more in the American workplace.

Major companies such as Ford Motor Co., General Electric Co., Boston-based New Balance, and Hasbro Inc. in Pawtucket, R.I., have made major investments in 3-D printing, using it to create prototypes for new products and to customize existing ones.

“Twenty years ago, people were putting Microsoft Word on their résumé. Now, you’ll be putting 3-D printing on it,” said Mark Sivak, an assistant academic specialist at Northeastern and one of three people involved in the lab’s development.

Those kinds of skills could help graduates land jobs within the 3-D printing field or be more employable by companies looking to explore uses of the technology, he said.

Northeastern has also enlisted Richard Ranky, a postdoctoral student who recently launched a 3-D printing start-up called 3-Spark, and Janos Stone, an adjunct technical instructor and entrepreneur who has developed a 3-D printing app called MeCube.

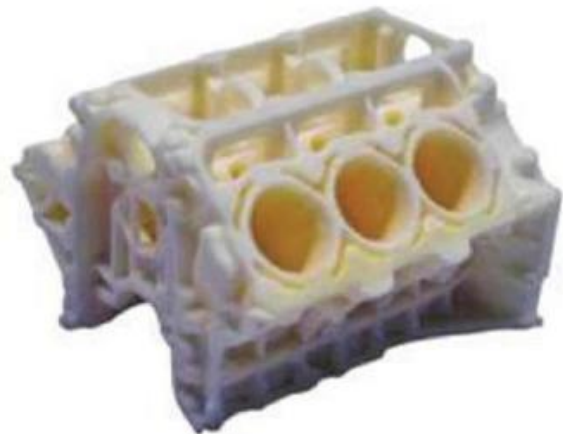
They will help design the lab and the workshops where students can learn how to use the software needed to create 3-D objects and print them out.

MeCube is a mobile app that lets users design and print simple shapes and is meant to be an entry point into the world of 3-D technology.

Stone has also launched a project called [Ana](#) that lets student create 3-D shapes based on an alphanumeric code he designed. It is a way of “speeding up the process of acceptance” so that students from various disciplines can experiment with and learn more about the technology.



■ This wrist brace was designed by using a 3-D scanner and 3-D printer.



■ A model of an engine block created with a 3-D printer.

Other schools, including the Massachusetts Institute of Technology and Worcester Polytechnic Institute, have plenty of 3-D printers, but Northeastern is taking a different approach: It's making the lab a centerpiece of its renovated library and opening it up to the entire student body.

Even though these kinds of printers are becoming more mainstream, “most people still don't know how to create 3-D objects,” said Pete Basiliere, an analyst at Gartner Inc. who follows the 3-D printing market.

It is not quite as easy as plugging in a computer and hitting print, he said, and most students will need some level of training to use Northeastern's laboratory. Northeastern is developing lessons and workshops for the lab, which will have instructors on staff.

It's also writing policies about what can and cannot be printed: no weapons such as guns and knives or objects that would violate copyright laws or school policies, said William Wakeling, the dean of the Northeastern libraries.

“There are a whole raft of policy issues that have to be clarified,” he said.

But the lab is meant to be experimental, and the school may add printers or make changes based on student demand, he said.

With this initiative, along with others to expand digital offerings in the library, Wakeling said, “one thing we don't have to worry about is not being relevant.”

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