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## Fab Labs at the Library: Community 'Makerspaces' Give Access to Cutting-edge Tools

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BY NICOLE BELBIN AND PAT NEWCOMBE

# FAB LABS AT THE LIBRARY

COMMUNITY 'MAKERSPACES' GIVE ACCESS

## THERE'S SOMETHING UNUSUAL



THE TEKVENTURE  
MAKERSTATION  
PARKED AT THE  
ALLEN COUNTY  
PUBLIC LIBRARY.

sitting in the parking lot of the Allen County Public Library in Fort Wayne, Ind. Pay a visit to the 50-foot trailer and you might be surprised with what you find. Inside are various tools for cutting and shaping wooden objects, an electronics work bench, an injection molding machine and one of the most advanced gadgets for inventors, a 3-D printer.

Allen County is one of just a handful of public libraries that have set up multi-purpose workshops for patrons who want to share and collaborate in order to create and build things. The terms used to describe these spaces include “makerspaces,” “fab labs” or “hackerspaces.”

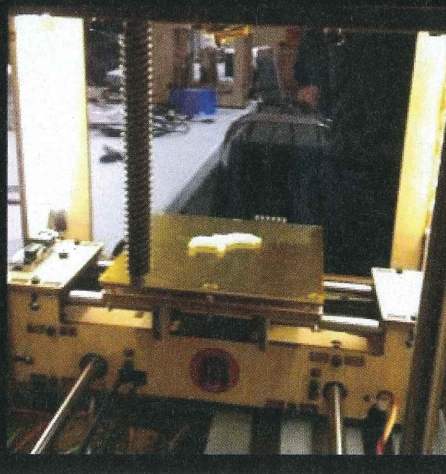
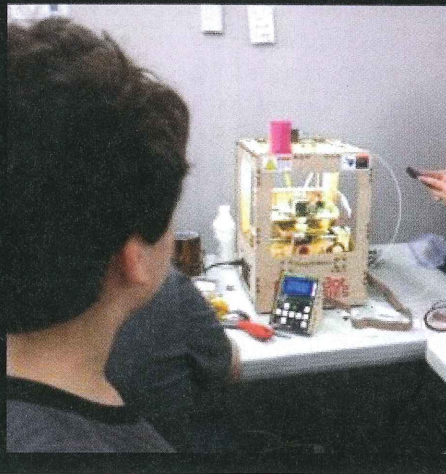
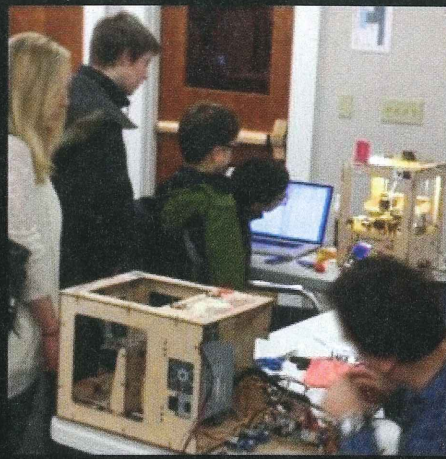
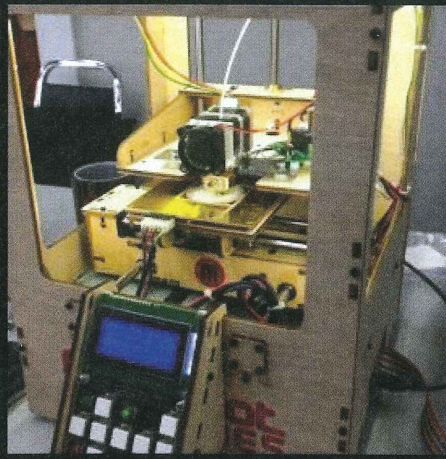
So why does the Allen County Public Library have a high-tech lab for would-be designers, engineers and inventors? “The library is in the learning business, not just the book business,” said Director Jeff Krull. “Anytime libraries come across an opportunity for people to learn and grow, they should do it.”

There are nearly 10,000 public libraries in the U.S., and patrons increasingly rely on them for access to technology. More than 90 percent of public libraries offer formal or informal technology training, according to a recent survey conducted by the American Library Association. Much of that training relates to instruction for computer skills, general software applications and Internet use.

Makerspaces and fab labs cater to a particular type of library patron: inventors, artists, entrepreneurs, crafters and youth groups. The technology used in these workshops can revolutionize the manufacturing process, allowing designs and creations that can be modified to suit individuals in ways not possible with mass production.

Take the 3-D printer: It uses spools of coiled plastics — the same materials used to make Lego blocks — that are strong, nontoxic and available in many colors. The printer creates an object based on a digital design by melting the plastic and extruding it to form the shape of the object it is printing. The object may even have movable parts. Once expensive, these high-tech printers are now available for \$2,000.

## D CUTTING-EDGE TOOLS.



communities of makers, inventors and do-it-yourselfers, all come together to support this unique makerspace.

Volunteers are the lifeblood of makerspaces, because they share their expertise and skills with novices. While Fayetteville utilizes some staff, it also has many volunteers, including a professor from Syracuse University who gave his time to put the MakerBot 3-D printer together. The library has engaged many volunteers to develop and run lab programs. "There is no pressure on staff to become experts in this technology; we have a core group of experts to help out," Considine said, adding that the library relies on peer-to-peer training to assist lab patrons.

Staff members, who are comfortable with the technology, participate in the Borrow-a-Bot program, where a librarian works with a patron for one hour to create an object. Fayetteville has open houses that attract up to 75 people. Community members can learn and do hands-on maker activities; the library provides lots of staff and outside help for these programs.

"Money is not an essential ingredient for a successful makerspace. People are far more important in this venture," Considine said. "People who identify with a space or project — not money — will help to sustain these spaces and projects." She recommends working closely with staff members, explaining that they do not have to become experts in order to sustain the lab. "Staff attitude matters more than staff expertise," she said.

Krull believes that the lab at the Allen County library has worked out well, but for libraries looking to bring members of the community into their physical space, the county's approach may not be the best option. "While the trailer is located right across the street from the library building, it is not drawing patrons inside," Krull said. He thinks it would be advantageous to move the space into one of the library buildings. Currently, with the relatively small size of the trailer, makerspace programs must be limited to 12 users at a time.

Looking ahead, Considine would like to offer the Fayetteville fab lab to youth camps with a nominal fee for materials. On previous trips to the library, elemen-

Allen County collaborated with TekVenture, an educational nonprofit specializing in makerspace technology, to create the lab. Working off a simple one-page agreement, TekVenture agreed to provide the trailer, along with the equipment and some free programming, and Allen County offered free parking.

The Fayetteville Free Library near Syracuse, N.Y., also has set up a special lab using similar technology services for its patrons; it is referred to as a "fab lab." Instead of housing it in a trailer, it's the first public library to build and house the lab inside the library and is run by staff, along with volunteers. The equipment includes a 3-D printer, which was donated by a local computer business.

The Fayetteville lab and its open approach to learning grew out of a relationship the library has with the School of Information Studies at Syracuse University, according to the library's executive director, Sue Considine. She compared the pool of students at the School of Information Studies to a big incubator. "The students help us to develop ideas and are forward thinking," Considine said. "This gives us a successful model — a

team that knows public libraries must evolve and develop new services."

Unlike Allen County's approach where there were no upfront costs, Fayetteville sought grant money to fund its lab. Starting with a \$10,000 innovation grant it received in 2011 at the Contact Summit, a social technology event in New York City, the library also raised additional money through Indiegogo, a crowd funding website. "Donors are coming from all over the world and not necessarily library folk," said Considine. "Individual pledges have been as high as \$5,000." The library also received a \$20,000 New York state construction grant, which will be used to create a permanent space for the fab lab.

The two approaches involve different levels of staff support. Allen County's setup required little to no library staff involvement. Volunteers from TekVenture conduct training programs and maintain the makerspace equipment. The open hours during which people can wander in have been very popular. Other offerings include Maker Meetups, which are geared toward the technologically savvy. Like-minded people who share in this collective approach, including

tary-schoolchildren have shown interest in the possibility of making missing game and Lego pieces. She also plans to showcase the wide variety of patron creations.

Krull's plans include extensive programming over the summer — some free, some with a modest charge. He is also looking at bringing the space into a larger, permanent location.

Allen County and Fayetteville have created quite a buzz among librarians interested in offering nontraditional services that use cutting-edge technology.

Both Krull and Considine feel that creating access to emerging technologies is completely in line with the needs a public library serves.

Many libraries view these projects as test beds for other communities to embrace the future, according to Marcia Warner, past president of the Public Library Association, a division of the American Library

Association. "Libraries have always been about books, information and an educated citizenry," she said. "It seems like a natural progression to move into an area of facilitating information and material creation."

The librarians offering access to the first makerspace and fab labs agree about their impact. "By providing access and opportunity to experiences, libraries provide a pathway for transformation," Considine said. "Technology is not the death of the public library today. It will, however, change libraries as they rethink their space and role."

Libraries, historically, retool continually, and the pace of evolution of the library promises only to move more quickly. **GT**

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## MAKERSPACE:

A makerspace is a location where people with common interests — often in computers, technology, science, digital or electronic art (but also in many other realms) — can meet, socialize and collaborate. Makerspaces incorporate elements of machine shops, workshops or studios where hackers can come together to share resources and knowledge to build and make things.

## MAKER MEETUPS:

A maker meetup is where groups of people with similar interests meet to work together, collaborate, create and share resources.

## CONTACT SUMMIT:

The Contact Summit bills itself as a "working festival of innovation where the Net's leading minds and entrepreneurs can connect with the people who are building the social technologies of tomorrow." Held in different cities, the event focuses on peer-to-peer solutions in technology, business, arts, education and government.

## FAB LAB:

The term "fab lab" traditionally refers to fabrication labs, which began as an outreach project from the Massachusetts Institute of Technology's Center for Bits and Atoms. These fab labs share core capabilities, so that people and projects can be shared across them. In New York, the Fayetteville Free Library's fab lab doesn't emulate these fab labs exactly, preferring to call its lab a fabulous lab and leaving specific capabilities up to the needs of the community it serves.



VENTURE'S MAKER STATION OFFERS ACCESS TO SOPHISTICATED EQUIPMENT LIKE 3-D PRINTERS AND SECTION-MOULDING MACHINES.