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3D printing: not just for hobbyists anymore

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Fairfield County Makers' Guild Treasurer Mark McCrate shows a Mobius strip he fabricated with a 3D printer at the community workspace in Norwalk, Conn., on Tuesday Feb. 17, 2016. The workspace provides the ... [more](#)

When orthopedic surgeon Dr. **F. Scott Gray** has a particularly complex reconstructive surgery, in addition to reviewing the patient's MRI and CAT scans, he might employ a three-dimensional printer to make a model that allows him to gauge the best approach.

"For certain things we do, MRI and CAT scans are wonderful. But with 3D anatomy, there's nothing like holding it in your hands," said Gray, a 60-year-old Ridgefield resident. He said the benefits of having a 3D model include allowing him to practice the procedure in advance, reducing the surgical time, planning the incision more accurately and diminishing the risk of patient infection.

"Most of what I do doesn't require a 3D printer, but I'm glad I know how to use it," Gray said.

Technology enthusiasts in Fairfield County have long enjoyed the possibilities for 3D printers that create solid objects from a digital file. As the machines moved from patented heavy industrial use to a wider and more-affordable tinkerer and hobbyist base, opportunities are now seen beyond 3D Star Wars figures as small businesses create prototypes for products to sell or show to potential investors.

"The strength of 3D printing ability is to get the idea out quick and getting it tested," said **Vladimir Mariano**, co-founder and president of the Fairfield County Makers' Guild (FCMG). "No matter what the idea ... in a few hours you are holding it in your hands. Compare that to going to a production facility and waiting weeks or months to get it back. The iterations are much faster."

The makers' guild is a nonprofit, community-operated workspace in Norwalk with tools and technology to help turn concepts into physical objects.

Mariano, a 34-year-old Norwalk resident, said FCMG members' projects range from "the practical to artistic" including a drain filter and a cell phone clip for cars. "It's both people solving problems and people trying to make things for a business." As for cost, Mariano said the printer filament is "almost a non-issue. The time is hours to wait for one print to complete. If you know how to design, you're a lot better off."

Mark Mathias, career technologist and the founder of **Westport Mini Maker Faire**, sees a 3D printer as "a catalyst for new ideas." Mathias, who owns three 3D printers, expects more than 10,000 participants to attend the fifth annual Westport Mini Maker Faire on April 30 at the **Westport Library**. "It's no longer a novelty. It's 3D printing 2.0, putting things to practical use," Mathias said.

Orlando Fonseca, a 39-year-old Westport resident who with friends developed a Chumbobb fishing product using a 3D printer at the library, cited cost and a fast turnaround as the reasons why they chose 3D printing. "Molds cost thousands of dollars and take months to create. After many trials and errors, we are currently on version number seven. Financially, there was no way we would've gotten to this point without the capability of 3D printing. 3D printers allow anyone to design, manufacture and refine prototypes at their own pace."

'Game changer'

Peter Gioia, economist at Connecticut Business & Industry Association in Hartford, calls 3D printing a "game changer" for Connecticut businesses and forecasts that "any company in the realm of manufacturing will have one."

Entrepreneurs can create 3D prototypes at commercial printers. There are also 3D printers at **Stamford Innovation Center**, **Fairfield University's** new entrepreneurship incubator space in downtown Fairfield, **University of Bridgeport's** engineering incubator space and some local public libraries including in Norwalk and Westport.

As for how local universities and small businesses can work better together on 3D printing and projects, **Tarek Sobh**, University of Bridgeport's dean of the school of engineering, noted his school already makes its 3D printer center available to local industries and government agencies and its incubator space is home to five startups with printer access. A possibility for the future is to send printer requests online, but Sobh noted the school's 3D printers are already heavily used.

As for how far the 3D printer can go, it might be like the Star Trek episode "Trouble with Tribbles," where the fictional alien species quickly multiples.

Case in point: Mariano of FCMG built two 3D printers himself — one of which includes parts made on a 3D printer.

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