

The Power of Production in Students' Hands



Educators share their stories about how Roland technology is helping students prepare for careers in STEM/STEAM.

From student friendly design software to high-quality output, Roland printers, cutters, milling machines and 3D printers are ideal for professionals and students alike. The following stories demonstrate how the quality and ease-of-use of Roland technology is helping empower students for professional success.





Students Building a Fab Future Auburn Career Center / iSTEM Geauga Fab Lab

Roland products: BN-20, VS-540i, LEF-20, and MDX-540

In 2015, Auburn Career Center in Concord Township, Ohio partnered with iSTEM Geauga Early College High School to create a Fab Lab, designed to broaden the effectiveness of the iSTEM and Career Center programs through experiential learning.

“Students thrive in a hands-on environment like the Fab Lab,” says Dee Stark, assistant principal, teaching and learning for the Center. “When students see the real-world application of what they learn, they can retain that learning for a lifetime.”

The Fab Lab features a full complement of Roland equipment, including two BN-20 printer/cutters, a VersaCMM 54-inch wide format color printer, an LEF-20 desktop UV flatbed printer, and two MDX-540 benchtop milling machines.

Students at iSTEM Geauga are using the FabLab equipment in design challenges and project-based learning. Projects to date include cell phone cases, key chains and other items that have been directly printed on using the LEF UV Printer. The BN-20 has been used for a wide range of marketing signage, banners, decals and other wide-format

projects. The items created with the MDX benchtop mills include, foosball players, soda bottles and other cylindrical shapes, as well as wooden chess pieces with complimentary chessboards printed on the LEF.

In regards to these projects and the outstanding results that the Roland machines provide for their students, Laura Ciszewski, the Center’s Information Support & Services Teacher, noted, “My students use the equipment to produce physical, finished products that look and feel professional.” She concluded, “Having the Roland equipment greatly expands the scope of the projects we can teach.”

“Each day iSTEM students ask if they get to use the Fab Lab today. There is an eagerness to learn.”

Dr. Trista S. Linden-Warren,
CEO/Superintendent, Auburn Career Center

Capturing Interest and Keeping It Castle View High School

Roland product: MDX-540

Castle View High School in Castle Rock, Colorado has approximately 2,000 students pursuing areas of interest in Visual and Performing Arts, Leadership and Global Communications, Biotech, Health Sciences, and STEM.

Castle View relies on Roland equipment to anchor its CAD/CAM instruction. “When I arrived, we had a CNC machine that was too hard to use. We needed a user-friendly machine that was robust enough for a classroom environment,” said former Aerospace engineer Rob Hazlehurst.

Castle View purchased a Roland MDX-540A benchtop milling machine. One of the deciding factors for Hazlehurst was Roland’s SRP software.

“Students need to be successful early in the process in order to stay interested. The Roland SRP software is well designed and has step-by-step instructions to make this possible.”

Rob Hazlehurst,
Castle View High School STEM instructor



Aviation model created by a Castle View High School student using student-friendly Roland software and the MDX-540A.

After some initial training, students are allowed to mill their own designs on the Roland. As part of their classwork, students design and fabricate a project for the Technical Students Association (TSA) competitions. In 2015, Castlevue took 38 students to the statewide competition, and had seven students make it to the podium.

“The precision milling of our Roland really helps students understand what works and what doesn’t in their designs,” said Hazlehurst. “It’s a very effective teaching tool.”

Growing and Developing Technical Skills Grandview High School

Roland products: MDX-540 and MDX-40A

Alan Rydlund teaches at Grandview High School in Aurora, Colorado and has revamped the curriculum to focus on CAD/CAM capabilities. To do so, Grandview purchased Roland MDX-540 and MDX-40A benchtop milling machines and a Roland LEF benchtop UV flatbed printer to print graphics directly onto milled projects.



"The Tech and Engineering class enrollments have grown every year," said Rydlund.

In Tech 1, students design a clock face for milling on the MDX. Upon completion, students use the LEF to print graphics directly onto their milled designs.

Rydlund noted that Roland's SRP software was a critical factor in their purchasing decision. "For many of our students, Tech 1 is their first experience with CAD/CAM," said Rydlund.

"We want our students to be able to be successful, and the ease-of-use of Roland's SRP software ensures that."

Alan Rydlund, Grandview High School

In Tech 2, students tackle designing a CO2 cartridge-powered car. The car bodies are milled from wood on the Roland MDX-540, using its rotary axis for four-way milling, and wheels are milled from vinyl plastic on the MDX-40A. After the LEF-printed graphics are added, the finished cars then race.

"Whatever the students design in SolidWorks is perfectly milled by the Roland," said Rydlund. "The students really see how their design choices affect performance."

Grandview's students compete at Technology Student Association (TSA) competitions against schools from around the state. In 2015, Grandview's students took first place overall and won the State Championship.

Expanding Print Experience Ryerson University

Roland product: XR-640

Ryerson University provides a Bachelor of Technology in Graphic Communications Management – the only degree in print media in all of Canada. Recently, Ryerson brought in the Roland XR-640 inkjet printer/cutter. "It makes sense to introduce our students to the technology they will use as they move forward in their careers," said Dr. Abhay Sharma, professor in the School of Graphic Communications Management.

"We always look for the best known brands with strong market penetration – Roland has an excellent reputation and a really good, wide range of devices," Sharma said. Ryerson students use digital printing in mandatory printing courses and their projects include production of decals, banners and floor graphics.

"Our students are required to use the printer every day, so our equipment needs to be easy to use, reliable and robust,"

said Sharma. "The XR is a flagship device. It prints beautifully and is very fast. The students can be very creative with their projects, with applications ranging from heat transfers to vehicle wraps and more."

One focus in the Graphic Communications curriculum is learning to operate RIP software to maximize production efficiency. "We concentrate on using the software to gang and tile jobs for optimal workflows," said Sharma. "We use Roland's VersaWorks because it is very user-friendly."



"Working on the Roland XR-640 is giving our students real world skills for the workplace. It is the ideal digital production platform for the next generation of printing professionals." Dr. Abhay Sharma, Professor, Ryerson University

Hands-on Production Leads Students to Success Arizona State University's Print and Imaging Lab

Roland product: XR-640

The Print Lab is the only in-house print facility serving ASU's 83,000 students, as well as its numerous academic departments and other campus groups. To handle its digital production, ASU recently acquired a Roland XR-640 64-inch wide-format printer/cutter. "We love the fact that with the XR you can print and contour cut any shape you need, in a single workflow," says Cathy Skoglund, Director of the Print and Imaging Lab.

"The Roland has been a great instruction and production device for our students." Cathy Skoglund, Director of the Print and Imaging Lab, ASU



Print Lab students are being recognized for their work and in 2015 they won numerous awards that included a Best in Category and Best in Show award from the Association of College and University Printers. The students are highly sought after by companies such as recent employers Blue Media, Leo Burnett, Shutterstock and RR Donnelley.

Intuitive Roland machinery is helping ASU students achieve this level of success. As Skoglund puts it, "Having the Roland as part of our production environment just makes my job easier."



3D Printing & Milling Machines

MDX-40A CNC Milling Machine



Affordable rapid prototyping on a convenient 12"x12"x4"(z) work area. Additional features include a rotary axis for unattended milling and a contact-scanning unit for reverse engineering projects.

MDX-540 CNC Milling Machine



Enhanced production on a 19.6"x15.7"x6"(z) work area at less than half the cost of most additive devices. Additional features include an automatic tool changer and a rotary axis for added speed and ease.

monoFAB ARM-10 Rapid Prototyping 3D Printer



Simple 3D desktop printing controlled with a single button – uses a Digital Light Processing (DLP) layered projection system and provides multiple object production at the same time.

monoFAB SRM-20 Compact Desktop Mill



Engineer intricate prototypes with the most precise CNC desktop mill in its class – features a simple interface and easy VPanel controls for fast and efficient production.

Flatbed Printers

VersaUV® LEF UV Desktop Flatbed Printers



Available in 30", 20" and 12" print-bed sizes, the LEF prints directly on a vast array of substrates and 3D objects up to 3.94" in height. Features advanced height sensor, quick curing system, White ink and Clear ink for creating texture and emboss effects.

Printers & Cutters

GS-24 Desktop Cutter



Create specialty signs and apparel with the most versatile desktop cutter ever. Cuts thick media and offers perforation options for cutting and prepping individual presentations.

VersaCMM® VSi Series Wide-Format Printer/Cutters



Available in 64", 54" or 30" models, they produce professional graphics across a wide range of applications and include Metallic, White, Light Black and Clear ink options.

VersaStudio BN-20 Desktop Printer/Cutter



One compact device for apparel, packaging, posters and more. Features 8-channel printheads for outstanding photographic and vector output.

XR-640 Wide-Format Printer/Cutter



Roland's fastest and most powerful large-format printer in a 64-inch model, featuring two inline-mirrored print heads and integrated printing and contour-cutting technology.

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