

**TODD CLARMO**  
**CORPORATE EXECUTIVE CHEF**

**1. YOU HAVE LED THE KITCHENS OF ULTRA HIGH END ESTABLISHMENTS TO COOL BREW HOUSES — IS THERE A COMMON LINK TO HOW YOU APPROACH THE FOOD?**

Yes, the common link is to understand what your guest wants. Then, push the boundaries with creativity, uniqueness, freshness and seasonality.

**2. WHEN YOU STARTED YOUR CAREER — CHEFS WERE THE UNSUNG HEROES THAT WERE RARELY SEEN AND HAD LITTLE FANFARE. WHAT ARE YOUR THOUGHTS ON THE 'CELEBRITY CHEF' PHENOMENON THAT HAS EMERGED OVER THE LAST 10 YEARS?**

I think that it is flattering that our profession is being noticed and regarded as a legitimate career. When I was younger, that wasn't the case. Unfortunately, it's the grinders in the kitchen that should get the notoriety. They are the ones that don't get noticed and humbly go about their business.

**3. WHAT ARE YOUR DAILY KITCHEN GOALS AND MOTIVATIONS?**

What keeps me motivated is to see happy cooks that are learning and progressing through their careers. A clean, organized kitchen crafting incredible food is the daily goal.

**4. YOU LIVE FOOD ALL DAY LONG - DO YOU COOK AT HOME?**

My wife is a professionally trained chef as well, so luckily she often cooks. I have no problem washing dishes.

**5. MOST MEMORABLE DINING EXPERIENCE?**

My most memorable meal was at Paul Bocuse Restaurant in Lyon, France. I was around 22 years old and was blown away. Everything about the experience was top-notch professional and classic French cuisine. It felt like I was in a dream.

**FIVE**  
**QUESTIONS**

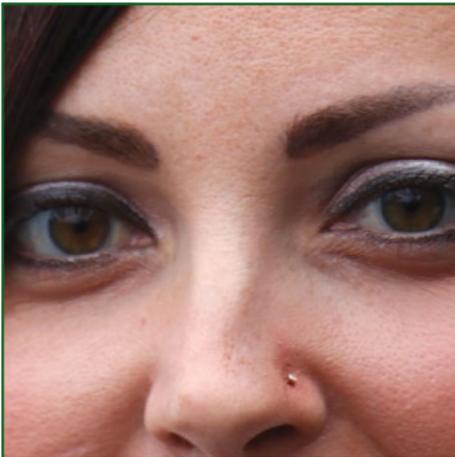


# *The man with the 3D plan*

Inexpensive prosthetic hands among the world of possibilities for Jeremy Hedges and his team – and they want to help teach kids everything they know

STORY BY ANDREW VOWLES

PHOTOGRAPHY BY ALISHA TOWNSEND



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**J**eremy Hedges was frustrated. There was plenty of discussion of big problems during his global studies program at Wilfrid Laurier University, but nobody talked much about solutions. His frustration was compounded by a co-op stint in telemarketing for an IT recruiter, a job he calls “smile and dial.”

He did well there, but he says: “Nothing about that was fulfilling to me. I wanted to work for myself, and I needed to be doing more than just making money.”

He quit to work at a metal recycling company, partly to get back in shape for his school’s rugby season.

As a varsity player and as president of the Laurier Lettermen Club, he helped to organize student athletes to visit kids in hospital and to run a fitness program at a local public school. But he still didn’t see how he was going to make a real difference in the world.

Now 23, and still only a year out of university, he’s president of Inksmith Ltd. Working out of second-floor space in a former post office building in downtown Kitchener, he and half a dozen employees are looking to make that difference – through 3D printing.

And they want the next generation of school kids to change the world with them. Hedges and his team aren’t just selling the 3D printers. They are also designing lesson plans that will help the education system get the most out of them.

3D technology also enables kids to learn about social and environmental issues, Hedges says. For example, one Australian company is printing artificial coral reef structures out of sandstone to replace coral damaged by warming ocean temperatures. Another organization called E-Nabler makes files available for printing 3D prosthetic hands. “It’s not just a problem but engineering a solution,” Hedges says.



*“We want to make technology more accessible to unleash imaginations.”*

JEREMY HEDGES

**S**eated in a coffee shop across the street from the Inksmith office one morning early this year, Hedges has just returned from a vacation in the Dominican Republic. He’s tanned and his straw-coloured hair gleams golden. “I think 3D printing is going to change how we make everything,” he says.

A machine for making stuff is going to

save the world?

It’s not just about making stuff, he says. It’s about making tomorrow’s citizens. “You can put the greatest social innovation in front of kids as a lesson plan.” Glancing across the street at that unprepossessing building on the opposite corner, he says, “We’re not creating new products but new ideas.”

Upstairs in a single room at 44 Gaukel

Jeremy Hedges, president of Inksmith Ltd., plays with a model of the Earth he created using a 3D printer. Hedges’ wardrobe provided by Paul Puncher menswear in Uptown Waterloo.

WHERE TO GET IT: PAGE 174

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St., several black plastic boxes stand on tabletops. One desktop machine contains a layer of newly printed identical nondescript gadgets. Made of plastic, each finger-length object is a part for a television stand, Hedges explains. Inksmith is producing the parts for an Alberta company for less than it costs to produce them through conventional milling or injection moulding.

In another box, they're printing anonymous-looking brackets intended for another startup company. Scattered around tabletops are a few more whimsical items, including a lurid orange plastic castle.

Hedges picks up what looks like an infinity symbol moulded out of red plastic: a model caffeine molecule, he explains.

For laser printing, you need ink and paper to create a two-dimensional document. To make a three-dimensional object, the

Cubicon printer boxes at Inksmith each contain a coil of plastic filament – the “ink” – that gets extruded through a nozzle inside. Programmed through a computer with all the instructions needed to create what you want, the nozzle traces back and forth and builds up the object by laying down layers of melted plastic.

“3D printing is a hot glue gun on three axes. It's remarkably simple,” says Hedges, whose Waterloo apartment is decorated with a few printed items, including a model of Ares, the Greek god of war.

**B**efore last year, Hedges was a newcomer to the field – although maybe there was something latent inside waiting for a spark. Growing up in Cambridge, he had long been interested in emerging technologies.

“I always wanted to be an inventor. 3D printing, virtual reality – all these crazy technologies were only just coming to life,” he says. Explaining that his dad sells robotics equipment to the plastic business and his mom is a college art teacher, he says, “3D printing was a weird blending of the two.”

He had spotted printing machines in maker spaces popping up within libraries and universities, and found himself fascinated by both the technology and its possibilities. Among the largest desktop 3D printers worldwide are MakerBot and Ultimaker. Those companies sell printers and host open-source files users can download to make all kinds of items. “The open-source community is amazing,” says Hedges. “3D printing opens doors. You can make anything with it.”

Near the end of his degree, he started looking into laser printing for a potential sign business. At a conference in New York early last year, Hedges connected with HyVision Systems, a South Korean company that makes the Cubicon printer. He was drawn to the printer's features, especially its “plug and play” ease of use. Nobody at the booth spoke English, but Hedges left his contact information anyway.

A month later, he had a call from Korea. “They wanted me to test the machine. They sent two units, and it all went from there. It was a strange course of events.”

In early 2016, he won \$30,000 in a pitch contest run by Kitchener's Accelerator Centre, which offers mentoring for business startups. His project was intended to make printer filament using recycled material. That idea didn't pan out, but the project got

Hedges into the 3D printing business.

The Cubicon brand was selling well in Asia, but the company had done relatively little English-language marketing. Today Inksmith is the exclusive Canadian reseller of Cubicon printers. Hedges imports the printers from Korea for resale. In 2016, Inksmith sold about 50 units. At current rates, he expects to import and sell about 1,000 printers this year, which would put him on track to become HyVision's largest international reseller outside of Asia.

He predicts that, within a decade, 3D printing will replace traditional injection moulding for many plastic parts. In another 10 years, he says the technology will replace CNC and other casting methods for making metal components. For now, most of the applications lie in prototyping, as a relatively inexpensive way to create parts

that may be tested for use.

Inksmith does rapid prototyping to help companies try out and perfect methods, reducing costs and improving lead times. Selling printers and making prototypes helps Inksmith pay its bills.

**B**ut Hedges has his eye on another potentially lucrative market – one that he hopes will make a difference through tomorrow's fabricators.

The company develops curriculum lesson plans with 3D printers to enable teachers to teach robotics, coding and other subjects. Schools subscribe for unlimited access to proprietary course projects that teachers may use with their classrooms.

The package is called the STEAM Plus education platform (science, technology, engineering, arts and mathematics).

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“Everyone thinks STEAM is only for science class, but you can think of a lot of other cool opportunities in arts, geography, even history class,” says Hedges. “3D printing is a hardware tool for enabling STEAM. We’re not a 3D printer company: we’re an educational technology company.”

So far, the company has developed about 12 hours’ worth of materials for teachers to use. Cam Turner, formerly engineering director with Desire2Learn, is program developer with Inksmith. He says the company is writing lesson plans across the curriculum for K to 12 classrooms.

On his own, Turner runs a pop-up maker classroom called Tinker Truck that teaches science and engineering design through hands-on activities in schools, libraries and summer camps. He consulted with

Themuseum in Kitchener on its maker space called the Underground Studio, opened in 2016.

Initially Turner wanted to buy printers from Inksmith, but he ended up joining forces with Hedges last spring. “We want to take emerging technology to students and school boards across the country,” says Turner.

He wants youngsters to go beyond downloading open-source files to print objects, and learn to design and build their own ideas – skills that he believes will be vital for what he calls the fabricators of the future. “I want kids to have tools to solve problems. 3D printing is a part of that.”

So far, they’re focusing on the regional market. The company has applied for funding for a proposed pilot project to test its training materials with a large Toronto-

area school board. That would be a first step to providing its educational package to schools across the country, says Hedges.

“What we’re building now is the foundation for tomorrow’s STEAM curriculum. Every school in Canada and the States is going to have 3D printers and use the technology to do new and wonderful things. We’re opening that door.”

He adds: “We build solutions to make the teaching experience and the education process different. When I went to school, we were just starting to transfer from paper to digital. Now we’re flipping that switch again and making everything digital real with 3D printing.”

In another fledgling project, Hedges hopes to help disadvantaged kids get their hands on this technology. He’s in early discussions with the House of Friendship in Kitchener

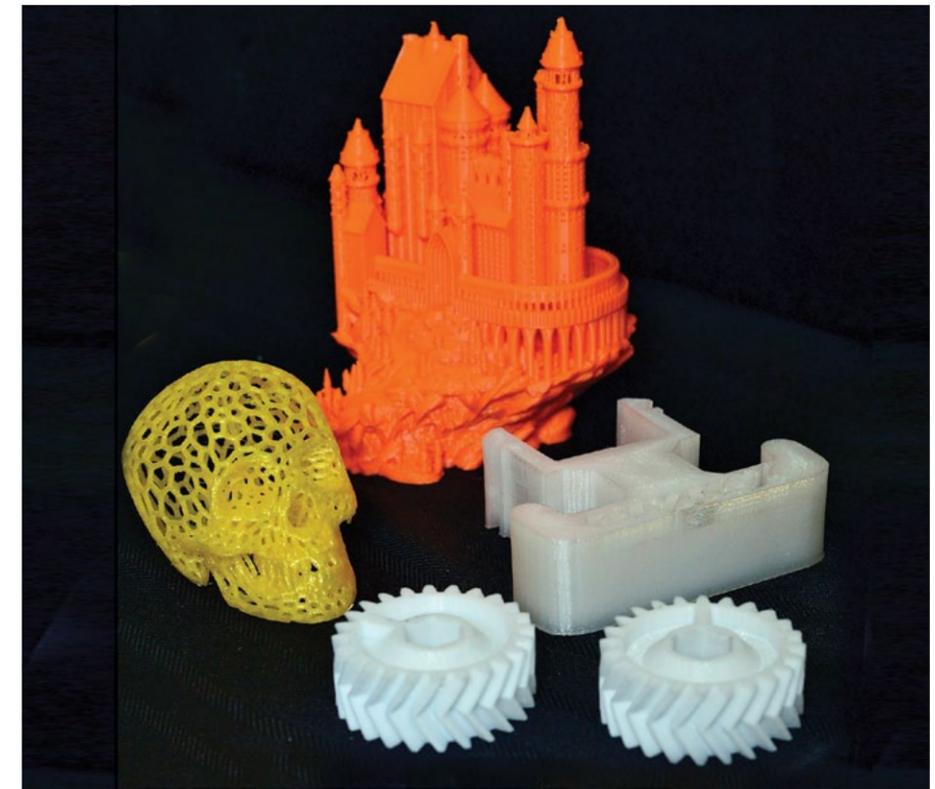
to establish a community centre program for low-income children in Waterloo Region.

Although details have yet to be worked out, he and House of Friendship executive director John Neufeld are talking about providing short workshops in 3D printing to kids, perhaps at the Kitchener Public Library.

Neufeld says such a program would give children tech and modelling skills, and point them to the open-source community for free access to materials.

“We want to make technology more accessible to unleash imaginations,” he says. “A lot of this kind of technology can lead to kids developing helpful skills.”

Not to mention providing a way for Inksmith’s young president to make a difference in the world. 



A wide range of items can be printed in 3D, including gears and an orange plastic castle.

PHOTOGRAPHY • IAN STEWART



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