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# Mr. Wizard for the Internet age

Want to know how to create a robot sandwich? Popular videos show how

By LAURIE RICH Columbia News Service  
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Bre Pettis, America's king of science cool, shows one of his inventions, the Cupcake CNC machine, a 3-D printer that doubles as a cupcake decorator. (Anthony Lanzilote / CNS)

A few weeks ago, Bre Pettis of Brooklyn, N.Y., had a hankering for a toasted cheese sandwich. Instead of heading to the kitchen or a diner, he cobbled together a robot named Sammich that clumsily flips bread and cheese down on a metal tray, jams it into the back of a jury-rigged toaster oven and pulls a completed sandwich out, melted and warm.

Then, as the Internet tech celebrity has done for the past four years, Pettis and friend Adam Cecchetti made a short video about Sammich — complete with Nintendo-sounding music and subtitles that read, "nom nom nom," as they munched their creations. He posted it on the Internet with instructions for viewers to create their own similar machines.

The video is part science and part skit, which is a Pettis hallmark. A hipster-styled Mr. Wizard with spiky gray hair, thick eyebrows and art glasses, he is iconic among the do-it-yourself set. His short works—showing how to make everything from a T-shirt cannon to a hovercraft that almost got him

decapitated — have been watched about 17 million times, according to YouTube counters.

"I'm pretty sure that the first week I worked with Bre, I said, 'You're going to be extremely popular,'" says Phillip Torrone, a senior editor at Make magazine, whose video podcasts of Pettis helped launch his cyberfame. "Bre isn't a master craftsman. In fact that's what's appealing. Some things fail, projects don't always work out — but that's the point."

Pettis, who has been lauded by everyone from Wired to The Wall Street Journal, has started to parlay his Internet fame into larger projects. His newest endeavour: a hardware company called MakerBot Industries that launched its first product in April. It's a mass-market 3-D printer that renders objects designed in 3-D computer programs in hard plastic and doubles as a cupcake decorator.

It's all part of a grand plan to have other people experience the feeling of accomplishment Pettis gets from simply making things.

"If right now you're bored in life — in this time in the world — you're doing it wrong," Pettis says.

Pettis was raised in Seattle. The tech gene is dominant in his family. His father studied under geodesic-dome creator Buckminster Fuller, and his grandfather worked on the Manhattan Project.

But his interest in making things was sparked by an uncle he spent summers with in Boston. As a six-year-old, he got up with his Uncle Joe at four in the morning and set out in a truck to find salvageable trash. His uncle would bring things back, fix them up and

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sell them at a flea market.

"He showed me everything as he did it. By the end, I was hooked," Pettis says. "If you've ever fixed something, you know it's a powerful rush at the end. The rush of completion."

In high school, he studied math and science and then went to Evergreen College in Olympia, Wash., famous for producing offbeat artists like Simpsons creator Matt Groening and Michael Richards of Seinfeld.

After graduation, Pettis spent seven years as an art teacher in the Seattle public schools. On a trip to New York in 2004, he discovered video art. He saw the artists selling their DVDs for \$15,000 each.

"Like most postmodern art, I thought, 'I can do that,' " Pettis says.

He started with a piece called the I Love You Project, where he filmed people closing their eyes and saying "I love you" over and over again. He made a DVD and took it to art galleries, but nobody bit.

So he put it online and started watching statistics. First, 10 people he didn't know watched it. Then 100 people. Six months later, he saw that 40,000 people had watched it.

"I was like, 'That's more than can fit in Mariners Stadium. There might be something to this,' " Pettis says.

So Pettis started video-blogging in 2005 and then filming interviews with people who created different things. Torrone, the Make magazine editor, met him at a tech event, checked out his independent work online and was impressed by his Mister Rogers-Bill Nye Science Guy vibe. He hired Pettis to start a video podcast series called Weekend Projects, where every week he would make something new and capture it on video. Less than a year later, millions of viewers were watching each month.

"I'm sure it beat some type of video-podcasting record, if someone kept those sorts of records," Torrone says.

Pettis quit teaching and spent his days trying new and different projects—from a weather balloon to custom-fit vampire fangs.

An Internet favorite is the episode in which he shows how to screen-print a T-shirt. The clip has been seen more than 1.6 million times, according to YouTube's counter.

There are other screen-printing how-tos on YouTube, but none matches the fan base of Pettis' piece. Nor the wit. Pettis and a friend screen-print their shirt with the image of a wolf's face, then he puts lighted diodes in the picture's eyes to make them glow and attaches a sound box to make the T-shirt howl when it's pressed near the hem.

"Don't do this on a live wolf because it would, like, make them go blind," Pettis says as he punches the diodes into the shirt.

Fans are inspired by Pettis' broad range of projects and skills and ability to explain things simply.

Pettis left Seattle in January 2007 with the intent to travel the world and explore regional technology. He landed first in New York City and never left.

That summer, he and a group of local technophiles, including a former Project Runway contestant, founded NYC Resistor, a "hackerspace" that occupies a floor of an old sewing factory in Brooklyn. Though the term "hacker" is often associated with malicious viruses, Pettis says the word just means people who like to take things apart. And that's what the space houses—tinkerers who use one other and the abundance of tools in the space to create different projects.

Pettis' new hardware company, MakerBot Industries, grew out of the collective. In 2008, he stopped creating videos for Make magazine to work on other projects, though he still makes about a video a week on his own. These videos and his website are sponsored by a web development company, which, along with classes in soldering and laser-cutting he teaches, is how he pays the bills.

MakerBot's 3-D printer, which comes out in mid-April, will be shipped in a kit that has to

be constructed by the buyer. Pettis sees limitless opportunities with the product—and not just in what it can make but in what it can do for the maker.

"I challenge everybody to do something they don't think they can do, whether it's making a robot or learning how to grill salmon," Pettis says. "Once you know how to make one thing, it opens doors to making other things. As soon as you can do something you didn't think you could do, the whole world is yours for the taking."

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