COULD IT CATCH ON?

Print Production

Dessert is moving into a new dimension.

3-D printing isn't new; the technology has existed since the 1980s—and it's now often used to create everything from art and jewelry to medical devices.

The technology's imprint on the baking industry is still unclear—as is the best way to print chocolate truffles—but the Culinary Institute of America is determined to find out.

"There are very few examples of literature published on the thresholds of edible, powder-based carbohydrate printing processes," says Liam MacLeod, a 3-D printing specialist in charge of the school's 3-D lab. "Our main mission is to discover the best way to manipulate these machines to optimize texture and flavor."

In spring 2015, the lab partnered with manufacturer 3D Systems and began using plastic powder printers retrofitted with stainless steel parts to test culinary practices and procedures.

To create a confection, like a cinnamon-sugar pumpkin shell, a mechanism within the printer rolls tiny layers of sugar powder onto a tray. A print head then dispenses water on the surface, binding sugar and other carbohydrate layers together.

Beyond small confections, the process could be used in larger-scale manufacturing, MacLeod says.

"You could organize 250 to 300 [items] to print at exactly the same time," he says. "The beauty of it is every single one would be identical. That could not be done by hand."

Once sweets-making 3-D printers become widely available, the price tag will likely be high. Media outlets like tech website The Verge have estimated some models will be $10,000 to $20,000. While that price range is out of reach for many bakeries, the payoff from investing in one could be huge.

"The machine is totally autonomous; you don't need someone sitting over it at all times," MacLeod says. "There's really not a lot of overhead costs—just the electricity to run it."

— *Erin Brereton*