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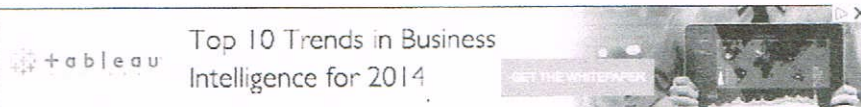
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## Gadgets For Your Future Kitchen

By day, Philip Preston holds a respectable job as president of the laboratory equipment manufacturer Polyscience. By night, he indulges in a secret hobby: playing with his food.

His latest project? A "blizzard chamber" for creating flavor-infused snow. Experimenting in his garage, Preston first installed a refrigerant pipe in an acrylic tube, lowering the air inside to minus 40 degrees Fahrenheit. Then he inserted another thin pipe to inject a swirl of liquid carbon dioxide forming a mini-tornado at minus 109 degrees. Using an airbrush, Preston atomized liquefied strawberries through a hole in the chamber's wall, and collected the pink crystals that fell to its floor.

"The result was that my wife and I each ate a bowl of strawberry snow," he says. "Not just shaved ice. Real snow."

**For a peek at the coolest gear for high-tech chefs, see [In Pictures: Gadgets Of Your Future Kitchen](#).**

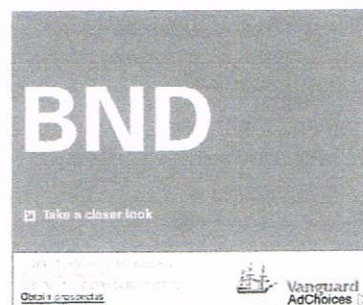
Such technical wizardry for a glorified snow cone might seem like a waste of effort. But Preston's penchant for high-tech food gadgetry is starting to boost his business. Last year, his company sold close to \$1 million worth of its devices to chefs. Polyscience's cooking gadgets—adapted from laboratory to kitchen—accounted for about 5% of the small Niles, Ill.,-based company's revenues.

Most of those sales were Polyscience's Thermal Circulator, a tub that allows cooks to vacuum-seal food in plastic and cook it in precisely heated water—a technique that keeps in the food's flavor without drying it as an oven would.

Some of Polyscience's inventions are less prosaic. The Anti-Griddle, a sheet of stainless steel with refrigerant coils attached to its underside, can cool food to minus 30 degrees F in seconds. Preston says he dollops crème anglaise onto it to create frozen lollipops. Another Polyscience device called the Smoking Gun allows chefs to infuse smoke flavors into food at room temperature. Wylie Dufresne, chef at the New York restaurant WD50, uses it to smoke blanched lettuce, which he then wraps around raw oysters.

Polyscience—which doubled its revenue from cooking technology over the past year—is one company that's feeding a wave of new interest in high-tech solutions among chefs, says Dave Arnold, the director of culinary technology at the French Culinary Institute in New York. Low-temperature *sous vide* cooking, such as the kind enabled by Polyscience's Thermal Circulator, he says, is now used in practically every high-end New York restaurant. He cites other increasingly popular high-tech tricks like ovens that inject humidity to keep foods from drying out, and mixing hydrocolloidal additives into liquids like coffee or orange juice to solidify them into caviar-like bubbles.

"There's a new generation of chef that really likes the science and the technology in these creative applications, and they're looking at the lab for inspiration," says Arnold. One element of that high-tech trend is the growing number of celebrity chefs, each of



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whom is seeking a competitive edge, says Arnold. Sharing tips via the Internet has  
 el) n) s "Likeminded chefs sharing ideas have really created this boom in thinking  
 about new techniques and technologies."

Not all of that thinking has been targeted at commercial kitchens. Ted Selker, a professor at the Massachusetts Institute of Technology's Media Labs, leads a project known as Counter Intelligence that aims to slow Americans' migration from cooking at home to eating in restaurants. The solution, he says, is using smarter technology to make the kitchen a more appealing place to work and live.

Selker estimates that Americans are eating out as much as 20% more frequently than families did in the 1950s. "So the things we're doing are about sensing people's intentions and making things easier," he says.

One MIT Media Lab prototype, the Smart Pot, was inspired by Selker's father, who was forced to learn to cook when Selker's mother passed away several years ago. "He would start cooking and forget that something was on the stove," Selker says. "Three pots were reduced to heaps of aluminum and a kitchen full of smoke."

So Selker installed a radio-frequency identification chip and a thermometer in a saucepan to allow it to communicate with a stove's computer. The Smart Pot, Selker says, "knows" when it's been placed on the stovetop, and can actually regulate its own temperature via radio signals to the stove.

Other Counter Intelligence inventions are even more ambitious. The Dishmaker, developed with Selker's student, Leonardo Bonanni, hydraulically presses acrylic disks into various plate, bowl and cup shapes in just seconds. That allows chefs to clear out their cabinets of rarely used dishes, instead creating a new set of dishes for every meal and then reusing them in a different shape. Then there's the Smart Sink, which uses cameras to sense whether someone is placing hands, food or plates under the faucet, and adjusts its temperature automatically to suit hot dishwashing or cold vegetable-scrubbing.

Some of the team's tweaks are designed to save energy: They created a refrigerator that sends a picture of its contents by wi-fi to a person's computer (it cuts down on those odd moments of opening the freezer and peeking inside) as well as a freezer that makes blizzard sounds when it's open to remind absentminded kitchen-goers to close it more quickly.

But the ultimate goal, says Selker, is to make people comfortable cooking something they wouldn't have tried otherwise. On that front, Selker is perhaps proudest of the Smart Spoon, a utensil outfitted with sensors that measure temperature, viscosity, and even the chemical properties of the food that's being stirred, like pH and concentration of ions. A chef, for instance, could dip the spoon into a mixture to measure, say, if it's salty enough to properly brine pickles.

"We don't need science fiction. We just need things that help us expand our notion of our capabilities," Selker says. "We need things that help us make better candy and not burn our steak."

***For a peek at the coolest gear for high-tech chefs, see [In Pictures: Gadgets Of Your Future Kitchen](#).***

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