

Local chefs bring science to the kitchen

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Don't try this at home. Not yet, anyway.

The time may well come when we are all cooking vacuum-packed pork shoulder in a 176-degree water bath for eight hours to preserve its texture and flavor. There may well be a day when we inject nitrous oxide into chicken sauce to form a light and tasty foam topping for an exotic dish.

But right now the field is pretty much the province of creative and highly trained chefs.

We're talking "molecular gastronomy" here, a slightly scary sounding term that describes the application of scientific principles to food preparation in order to intensify flavor. For quite a while now, molecular gastronomy has been the next culinary frontier.

Though it's been slow coming to these parts, the field has been explored by some of the world's greatest chefs: Ferran Adria in his El Bulli restaurant outside Barcelona; Heston Blumenthal at the Fat Duck outside London; Thomas Keller in Napa Valley's French Laundry. Chefs in Chicago and New York explored the field, too.

Now, some of our local chefs are calling it the most exciting thing to come down the cooking trail since — well, since people started dangling woolly mammoth legs over a fire.

"It makes eating an experience, not just a process," says J. J. Richert of Torches in Kenmore. "It's about looking at food with a different pair of eyes."

Local chefs are entering the field slowly, each applying scientific principles in different ways.

"The use of different techniques allows such control of texture and flavors that it takes ordinary cooking to another level," says Mike Andrzejewski of SeaBar in Williamsville and Buffalo.

Often, molecular gastronomy involves deconstruction. Chef Adam Goetz of Samples on Allen Street uses a Caprese salad as an example. It's a classic combination of fresh tomatoes and basil mozzarella, but he might use basil foam and thickened tomato water for a totally different texture and distillation of flavor.

"The idea is that you don't look at things the way you always have — open your eyes a little bit," he says.

There are few technical books on molecular gastronomy but there's still plenty of trial and error involved. And food safety issues must be dealt with. "We're all still learning," Goetz says.

Many of the ingredients used in this kind of cooking have chemical names — agar agar, for instance, xanthan gum, lecithin — they're all used for emulsifying and/or thickening. "They are all found in industrial foods," says Goetz. "You can go into any nursing home and find the pantry full of them.

"But yet there are all products of nature." (Agar agar is seaweed, xanthan gum comes from corn and lecithin from egg yolks and legumes. Health food stores sell them all.)

Sometimes exotic delivery systems are used, too. At Torches, Richert will be thickening a chocolate mixture with xanthan gum and inserting it in plastic pipettes he purchased from a surgical supply outlet.

Then, he'll spear the pipette with a raspberry and rest the whole thing across a coffee cup. And this will come with instructions. The diner is supposed to chump the raspberry off and squeeze the chocolate right into his mouth. Then comes the coffee. Ahhhhhhh. (The pipette itself is not edible, please note.)

Andrzejewski is working on *sous vide* foods, or "under vacuum." Andrzejewski calls it an "air tight poach." Actually, the method is similar to the food saver machine many home cooks use for preservation — the food is vacuum-sealed in plastic, frozen and finally cooked in warm water.

Andrzejewski has been creative. Instead of buying a \$3,000 Cryovac machine, he's been using an induction burner or even a crock pot with temperature control.

He puts sealed off-the-bone short ribs, for instance, in a 142-degree water bath for 24 hours to produce a velvety meat that's ultra flavorful and ultra tender all the way through. The ribs are cooked medium rather than well done. (You usually cook short ribs at a higher temperature and the well done meat falls apart.)

He also uses a whipped cream maker to prepare foams with lecithin or xanthan gum to stabilize them.

Adam Goetz has also been experimenting. He makes powders from carrots and other vegetables — cooking them in a low oven and when totally dry, grinding them for a garnish. He's served a double rich mushroom broth with a rosemary foam on top that looks like cappuccino.

He's also piped Chicken Mousseline into chicken broth to make it look like noodles.

"Once you start thinking outside the box, you never want to go back," he says.

Obviously, this isn't food for everyone. Nobody has quite figured out how to deconstruct a chicken wing yet, but eventually someone will and that concept will probably not take off.

But as the prices for equipment come down and the concept becomes more mainstream, we'll see more molecular gastronomic experiments as time goes on.

But caution has to be a watch word. And restraint.

"You can't just do it because you can. No one wants to reinvent the wheel," says Adam Goetz.

"There's a reason why flavors go together, you can freshen the ideas but you always have to make sure you give a nod to the past."