

# INVENTORS

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DIGEST

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Nathan Myhrvold's  
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with Pouches




Photo courtesy of Scott Jackson

## Look What Nathan Myhrvold's Got Cooking

By Mike Drummond

The former Microsoft chief technology officer, space physicist, paleontologist, photographer, inventor and gourmand believes the kitchen and food production are due for an innovation makeover.



*Sous vide.* Pronounced *su vid*, is French for under vacuum. It's a way of cooking using airtight plastic bags placed in hot water well below boiling point, usually around 140°F.

The boiling point of water is 212°F, but varies depending on barometric pressure.

For Nathan Myhrvold, the kitchen is just as much a chemistry lab as it is a setting for preparing cuisine.

When Myhrvold cooks, he's likely to use exotic homogenizers, liquid nitrogen, high speed centrifuges and gelling agents known as carrageenans derived from seaweed. His area of interest and growing expertise is in *sous vide*, a method of cooking food in vacuum-sealed plastic pouches submersed in warm water for long periods.

"It takes lots of experimentation," Myhrvold says of *sous vide*. But, as he notes, "If you want to do something new and innovative, it takes a bit of research."

Myhrvold should know. He's the former chief technology officer at Microsoft and founder of Microsoft Research, the company's R&D arm. He has a master's in geophysics and space physics from UCLA, a Ph.D. in theoretical and mathematical physics, and a master's in mathematical economics from Princeton.

As a postdoctoral fellow at Cambridge University, he worked with Stephen Hawking in cosmology, quantum field theory in curved space time and quantum theories of gravitation. In 2004, he wrote the forward for *Juice: The Creative Fuel That Drives World Class Inventors*. He personally holds scores of patents or pending patents, and his company, Bellevue, Wash.-based Intellectual Ventures, which commercializes inventions, has amassed more than 20,000 patents. (Please see "I'm Not a Patent Troll" on next page.)

For kicks he funds and participates in paleontology expeditions and is an avid nature and wildlife photographer.

When he's not acquiring and commercializing patents, contemplating curved space time or digging for dinosaur bones, he finds refuge in the kitchen. He's an investor in the Zagats' restaurant-guide business and has a playful business card that reads "Chief Gastronomic Officer." Cooking is one of his lifelong passions.

"When I was nine, I wanted to cook Thanksgiving dinner," he says. "And my mom let me. Since that time I've been fascinated with the whole process."

Kitchens have become larger, more complex areas for household interaction. They're utilitarian. Inviting. Communal. One survey revealed many kitchens serve as the family confessional.

Because it has become the focal point of modern household activity, the kitchen offers a petri dish for innovation, particularly for independent inventors. Veg-O-Matics. Ginsu knives. George Foreman grills. Potato peelers. Pasta makers. Bread machines. There

seems to be an endless stream of kitchen gadgets year after year. Yet Myhrvold believes there's room for improvement.

"The most technologically advanced appliance in the kitchen is the microwave oven," he says. "What we're trying to do is find ways in which technology can make material differences in the way in which we cook. Sometimes it's hardware, others are ingredients."

That's one reason he finds *sous vide* so fascinating. The technique offers a way to test the bounds of taste and technology. Yet when he first dabbled in it, he was frustrated by a lack of information. So he's writing a book on the subject, still untitled, due later this year.

"Conventional cooking is not taught by explanation," he says. "It's just, 'Do this. Cook it for this amount of time and at this heat and you'll be fine.'" It's clear his book will delve into the science behind his cooking method of choice.

"We've done tremendous amount of experiments checking the limits of how far *sous vide* can go," he says.

He prefers beef short ribs cooked for 36 hours at 130 degrees. The meat retains its color. The low heat doesn't kill the taste. And the ribs are tender without dissolving off the bone.

But as with any ongoing experiments, sometimes things go wrong. "My worst disaster recently was using a high-speed centrifuge," he concedes. "I was processing tomato soup. If you process it right, you can make it dead clear. But if you don't seal the centrifuge, it leaks and sprays the inside."

## Kitchen Democracy

Evidence abounds that technology is invading and will continue to infiltrate the kitchen, driven largely by how the context of the room has changed in the modern era.

"The kitchen's become a democracy – both men and women have influence about how kitchens are being used," says Steven Kleber, president and founder of home and building marketing firm Kleber & Associates and the immediate past president of the National Kitchen & Bath Association's Center for Kitchen and Bath Education and Research.

"If you're at a party, you're usually in the kitchen," he says. "It's part of the theater, where guests get involved in the preparation. The kitchen used to be outside, in another building. It was smoke-filled and hot and you'd rush prepared foods into the home. Now, flash forward – the most expensive per-square footage and the most technological



Whirlpool has delayed the launch of its centralpark Connection fridge, which features digital photo display technology. LG Electronics also discontinued a fridge that integrated a flat-panel television in the door.



The Miele G 2002 La Perla Series dishwasher adjusts heat and drying time based on a kitchen's temperature. Photo courtesy of Miele



Innovative Stone's PermaShield granite countertops come with a high-tech, eco-friendly anti-stain treatment. Photo courtesy of Innovative Stone

gadgets in the home are found in kitchens.”

Among the more interesting manifestations of the kitchen as a social hub and technology driver is the induction cook top, which heats metal pots and pans, but the cooking surface itself remains cool to the touch. Aging boomers, the blind, children and drunken party guests can't get burned by accidentally touching the stovetop.

Kleber sees existing technologies becoming more integrated with appliances.

LG Electronics, for instance, introduced a refrigerator with a 13-inch flat-panel, cable-ready television and radio built into the door. It was a nod to the fact the kitchen has become the most trafficked room in the home. However, consumers reported wiring problems and a host of woes related to the freezer and LG has since discontinued it. The company had a similar flop with its combo fridge and Internet console.

Similarly, Whirlpool and Ceiva developed the centralpark Connection fridge, a proprietary digital photo frame and technology interface on the freezer door. The device was designed to allow you to change photos and plug in different devices, including iPods.

“The technology space changes very rapidly, but appliances don't,” says Randy Voss, senior manager for Whirlpool global strategy and business development. “The question became: How do you help

someone satisfy an immediate need and help clean up the clutter?”

“The refrigerator door,” he adds, “is the busiest in the home.” However, the company has since delayed the launch.

“Whirlpool is taking the opportunity to reevaluate the centralpark Connection concept,” a spokeswoman said in an e-mail. “Currently, we are gathering feedback on devices and further investigating the needs of our consumers before fully bringing the product to market.”

Whirlpool has since introduced 6th Sense technology in some side-by-side refrigerators. It automatically helps the appliance quickly return to normal internal operating temperatures, such as when you put in hot leftovers.

On the horizon from various manufacturers: Refrigerators that read bar codes, enabling the appliance to alert you when perishables are about to go bad, appliances that fast freeze and cook food, and others that monitor and regulate energy use in real time.

In fact, last year Miele introduced the Miele G 2002 La Perla Series dishwasher that adjusts heat and drying time based on a kitchen's temperature. At the end of the cycle, the door opens to let air in and speed up drying, resulting in lower energy consumption.

But do we even need appliances?

Lisa Bodell, chief executive at New York-based consultancy futurethink, predicts that ongoing developments in green or eco-

## I'm Not a Patent Troll

No discussion of Nathan Myhrvold is complete without mentioning Intellectual Ventures or IV, his firm that buys, sells, develops, licenses and commercializes patents.

The Bellevue, Wash.-based company has amassed more than 20,000 patents since it opened for business in 2003.

Shane Robison, the chief strategy and technology officer at Hewlett-Packard told *Fortune Magazine* in 2006 that IV is “a very large patent troll,” a pejorative for an entity that neither invents nor makes products but instead acquires patents and uses them to extort money from legitimate businesses by suing or threatening to sue.

Suzanne Harrison, author of *Edison in the Boardroom* and head of intellectual property networking site Gathering2.0, says companies may

feel compelled to license potentially infringing patents from Myhrvold's firm, or risk greater financial pain from another company that acquires that same patent from IV later.

“It's sort of a modern-day shakedown,” she says. “Has he told me that? No, but in the end, someone must litigate.”

Myhrvold scoffs at such talk, noting that IV has collected more than \$1 billion in revenues from commercializing or licensing patents and “we've never litigated once.”

“I think that ‘patent troll’ is an overused and abused term,” he adds, noting that a friend of his says you can't do anything new in the world without being misunderstood.

“Our business model is very new,” he says. “I think we're misunderstood.”

friendly products will spur innovations in packaging.

She sees new breeds of packages able to keep contents cold or hot or in temperate stasis until you need them heated or cooled.

"The package," she says, "becomes the kitchen. And with that, do you need as many appliances?"

## Out Here In The Field

Sometimes, innovations in the kitchen are invisible or take place far from homes.

Karen Pearse has hit on a way to improve on that essential kitchen upgrade, the granite countertop.

Yes, even a rock can undergo a technological renaissance.

Pearse is founder and chief executive of Hauppauge, N.Y.-based Innovative Stone. Its product, PermaShield, is an anti-stain compound that's infused into the stone at the molecular level. It comes with a 15-year guarantee. The company believes its product is good for a lifetime, "but many states don't allow you to say that," Pearse says.

The proprietary treatment itself is waterbased.

"There's some amazing green things about it," says Pearse. "Consumers no longer have to use harmful chemical sealants in their homes."

Other food-related innovations are afoot in the field.

Companies such as DuPont subsidiary Pioneer and German chemical corporation BASF have developed bio-engineered or genetically altered soybean and corn seeds that are allowing farmers to produce bumper crops.

In 2007, Kip Cullers, using genetically altered seeds from Pioneer, harvested 155 bushels of soybeans per acre from his plot in Stark City, Mo. The U.S. average is 44 bushels.

Such figures have global ramifications. Rising food and energy costs and global hunger all are intersecting – again. With the emergence of China and India as post-developing nations, the

# Hooking Up With IV

Intellectual Ventures' inventions span a broad range of areas, including computer software and hardware, UI design, semiconductors, biomedical devices, advanced medical procedures, digital imaging, nanotechnology and advanced particle physics.

If you'd like to send IV information about your invention, send only public information, such as published papers, patent numbers or published patent applications to: [inventions@invent.com](mailto:inventions@invent.com).

**Do not send confidential information.**

demand and cost for stable foods has never been higher. Thirty-three poor nations are now at risk for social unrest due to escalating food prices, according to the World Bank.

By increasing productivity per acre, farmers can feed more people, helping with political stability and, with it, the prospect for economic growth.

All this, of course, has not escaped the notice of Myhrvold, the cerebral chef who has a thing for cooking meat in vacuum-sealed baggies.

"Mankind grabbed a tiger by the tail when it developed agriculture," he notes. "We went from being dependent on a thing to being dependent on technology," in this case tractors and combines, among others.

He will continue to experiment with new ways of cooking. And while his Intellectual Ventures business focuses on commercializing patents related to computing, medical, nanotech, imaging and particle physics, he nonetheless expresses an interest in agricultural developments that have a direct impact on his kitchen-based passion.

"We need a second agricultural revolution now," he says. "The solution is more agricultural technology. We need to invent our way out of the (hunger) problem. It's been done before." ■

# Know This

**Warren Tuttle** of New Canaan, Conn.-based Monashee Marketing LLC, introduced the **Misto** olive oil sprayer and the **Smart Spin** plastic storage system.

The dour economy has compelled more people to dine at home, meaning it's a **great time to be a housewares inventor**, he says. Although consumers may be unwilling to buy an expensive tech toy, a cool kitchen gizmo may satisfy their gadget urge.

Make sure the gadget appeals to the mass market. Hint: **no kumquat juicers**. And try to hit a price point between \$10 and \$20.

"The **ideal price is around \$20**," Tuttle says. "It's low enough so that people won't be put off, and it'll have a high enough margin that makes it interesting for manufacturers."

Many companies are looking for **well-designed, low-cost, space-saving** items, notes serial product developer and EdisonNation.com regular Roger Brown. He invented **pizza scissors** and

the **Pebble Peeler**, among others.

"From the kitchen standpoint, you have a lot of companies **wanting to expand their product lines**, but do it as cheaply as possible," Brown says. "Anything that's not battery powered or electric is going to get a higher review for them."