

Journal #2605 *from sdc* **6.4.12**

Harvard University Announcement
Hand game tournament in Yerington
National Register Program Requests Comments
A Global Call: Eco Warriors, Arise!
Churchill County Seeks Library Director
Innovations that will Change your Tomorrow

Harvard University Announcement
No tuition and no student loans

Harvard University announced over the weekend that from now on undergraduate students from low-income families will pay no tuition.

In making the announcement, Harvard's president Lawrence H. Summers said, "When only ten percent of the students in elite higher education come from families in the lower half of the income distribution, we are not doing enough. We are not doing enough in bringing elite higher education to the lower half of the income distribution."

If you know of a family earning less than \$60,000 a year with an honor student graduating from high school soon,

Harvard University wants to pay the tuition. The prestigious university recently announced that from now on undergraduate students from low-income families can go to Harvard for free... no tuition and no student loans!

To find out more about Harvard offering free tuition for families making less than \$60,000 a year, visit Harvard's financial aid website at: <http://www.fao.fas.harvard.edu/> <http://www.fao.fas.harvard.edu/> or call the school's financial aid office at (617) 495-1581.

SEND TO SOMEONE WHETHER THEY CAN USE OR NOT. THEY JUST MIGHT KNOW SOMEONE WHO CAN.

In addition:

[image001.png GH2012.Fair.Flyer.pdf unknown-189 B](#)

The 2012 Graduate Horizons program and Harvard University will host a Graduate & Professional School Fair that is open to the public on June 16th in Cambridge, MA. Please help spread the word. Register today!

I'm sending you a flyer for a **hand game tournament** that we are having here in Yerington, Nevada. I know some of you know it by Stick game but I have always know it by hand game.

I'm forwarding this flyer just to let you know that I'm still involved in the community but have changed location to my home reservation.

This event is sponsored by the Wovoka project committee. This is the first time we are having this event on our reservation in 40 + years. The first place winner will get \$1000.00, second and third will share entry fee money. Our tribal Council has donated \$500.00 and our committee is raising the rest. We will have raffles and do a food booth to raise funds. All fund will go into our current and future events.

The Wovoka project committee is committed to honoring Wovoka (Jack Wilson) in the Valley that he lived, worked and began the circle/round dance. We would love to see a museum here on the rez and also to have a Numu cultural center to honor our relative and cultural survival that we have come through. We are working on getting a web site up and running soon.

If anyone is interested in donating to the Wovoka project you can send your checks to: Yerington Paiute Tribe (YPT) Wovoka project. 171 campbell lane, Yerington, Nevada 89447. We are a small reservation pop 350 ?) and are surrounded by a farming community. (Population 2800)

Take care, LaVerne Lavkrob@aol.com

ps: Please pass on flyer to people who you feel will be interested. [handgame.pdf](#)

This is VERY important
National Register Program Requests Comments on Identifying, Evaluating, and Documenting Traditional Cultural Properties and Native American Landscapes

Through October 31, 2012, the National Park Service (NPS) will be soliciting written comments and recommendations from its tribal, national, state, and local historic preservation partners, National Park Service regional offices and parks, other Federal agencies, and the public at large regarding updating National Register (NR) Program guidance for identifying, evaluating, and documenting properties that are historically significant as Traditional Cultural Properties (TCPs) and/or Native American landscapes.

With the 1990 release of National Register Bulletin 38, Guidelines for Evaluating and Documenting Traditional Cultural Properties, NPS clarified a broader scope of properties that could be considered eligible for listing in the National Register of Historic Places (NR) for their significance as Traditional Cultural Properties, and provided written guidance on working with these properties. This policy direction was followed by the provision in the 1992 amendment to the National Historic Preservation Act stating: "Properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization may be determined to be eligible for inclusion in the National Register."

While Bulletin 38 remains an essential, basic resource for identifying, evaluating, and documenting TCPs, in recent years the number of requests for additional assistance in this regard from State and Tribal Historic Preservation Offices, Federal agencies, and preservation professionals has increased significantly. NPS believes the best way to address these requests is through the provision of updated, published guidance on how to better identify and evaluate:

- What constitutes a "traditional" community
- "Continuity of use" by a traditional community

- Evolving uses of resources by a traditional community
- Multiple lines of documentary evidence
- Broad ethnographic landscapes
- Property boundaries
- Resource integrity

In addition to the issues noted above, NPS is also seeking to identify and address any other “user-identified” TCP-related issues, as well as requesting comments and recommendations that specifically address the development of published guidance related to identifying, evaluating, and documenting NR-eligible Native American landscapes.

NPS requests that all comments and recommendations related to the issues outlined above should be forwarded via email to: nr_info@nps.gov

Respondents should identify their submission(s) as a “TCP/NAL Comment” in their e-mail “subject” box.

Responses submitted via email will be posted on an ongoing basis beginning the first week of June 2012 on the NR website located at: <http://www.nps.gov/history/nr/publications/guidance/TCPcomments.htm> . Respondents who do not want their names and/or e-mail addresses posted on the NR website along with their comments, or do not want their comments published at all, should clearly indicate that preference in their e-mail. Comments that contain any inappropriate language or misleading or discriminatory remarks will not be posted.

Alexis Abernathy, National Register of Historic Places
alexis_abernathy@nps.gov (NOTE: new email) Work (202)354-2236 fax (202)371-2229

Shelly Davis-King, Davis-King & Associates, PO Box 10, Standard, CA 95373
 Office: (209) 928-3443 Cell: (209) 694-0420 Fax: (209) 928-4174

A Global Call: Eco Warriors, Arise!

Vandana Shiva, The Asian Age

Shiva writes: "In June 2012, movements and leaders will meet in Rio for Rio+20, two decades after the Earth Summit was organized in 1992 to address urgent ecological challenges such as species extinction, biodiversity erosion and climate change." [READ MORE](#)

Library Director

Library Director Churchill County hiring new Library Director. Quals include MLS or MLIS degree + 5 yrs. Admin. exp. Starts at \$4,562/mo. Apply by 5:00 PM on 6/29/12. Contact Churchill County HR, 155 N. Taylor St., #155, Fallon, NV, 89406

Innovations that will Change your Tomorrow

The electric light was a failure.

Invented by the British chemist Humphry Davy in the early 1800s, it spent nearly 80 years being passed from one initially hopeful researcher to another, like some not-quite-housebroken puppy. In 1879, Thomas Edison finally figured out how to make an incandescent light bulb that people would buy. But that didn't mean the technology immediately became successful. It took another 40 years, into the 1920s, for electric utilities to become stable, profitable businesses. And even then, success happened only because the utilities created other reasons to consume electricity. They invented the electric toaster and the electric curling iron and found lots of uses for electric motors. They built Coney Island. They installed electric streetcar lines in any place large enough to call itself a town. All of this, these frivolous gadgets and pleasurable diversions, gave us the light bulb.

We tend to rewrite the histories of technological innovation, making myths about a guy who had a great idea that changed the world. In reality, though, innovation isn't the goal; it's everything that gets you there. It's bad financial decisions and blueprints for machines that weren't built until decades later. It's the important leaps forward that synthesize lots of ideas, and it's the belly-up failures that teach us what not to do.

When we ignore how innovation actually works, we make it hard to see what's happening right in front of us today. If you don't know that the incandescent light was a failure before it was a success, it's easy to write off some modern energy innovations — like solar panels — because they haven't hit the big time fast enough.

Worse, the fairy-tale view of history implies that innovation has an end. It doesn't. What we want and what we need keeps changing. The incandescent light was a 19th-century failure and a 20th-century success. Now it's a failure again, edged out by new technologies, like LEDs, that were, themselves, failures for many years.

That's what this issue is about: all the little failures, trivialities and not-quite-solved mysteries that make the successes possible. This is what innovation looks like. It's messy, and it's awesome. **Maggie Koerth-Baker**

1. Physicists at Wake Forest University have developed a fabric that doubles as a spare outlet. When used to line your shirt — or even your pillowcase or office chair — it converts subtle differences in temperature across the span of the clothing (say, from your cuff to your armpit) into electricity. And because the different parts of your shirt can vary by about 10 degrees, you could power up your MP3 player just by sitting still. According to the fabric's creator, David Carroll, a cellphone case lined with the material could boost the phone's battery charge by 10 to 15 percent over eight hours, using the heat absorbed from your pants pocket. **Richard Morgan**

2. Soon, coffee isn't going to taste like coffee — at least not the dark, ashy roasts we drink today. Big producers want uniform taste, and a dark roast makes that easy: it evens out flavors and masks flaws. But now the best beans are increasingly being set aside and shipped in vacuum-sealed packs (instead of burlap bags). Improvements like these have allowed roasters to make coffee that tastes like Seville oranges or toasted almonds or berries, and that sense of experimentation is trickling down to the mass market; Starbucks, for instance, now has a Blonde

Roast. As quality continues to improve, coffee will lighten, and dark roasts may just become a relic of the past. **Oliver Strand**

3. Your spandex can now subtly nag you to work out. A Finnish company, Myontec, recently began marketing underwear embedded with electromyographic sensors that tell you how hard you're working your quadriceps, hamstring and gluteus muscles. It then sends that data to a computer for analysis. Although the skintight shorts are being marketed to athletes and coaches, they could be useful for the deskbound. The hope, according to Arto Pesola, who is working on an advanced version of the sensors, is that when you see data telling you just how inert you really are, you'll be inspired to lead a less sedentary life. **Gretchen Reynolds**

4. The problem with laptops and tablets, says Mark Rolston of the design firm Frog, is that they're confined by a screen. He wants to turn the entire room into a monitor, where you can have the news on your kitchen table while you place a video call on your fridge. And when you're done, you can swipe everything away, like Tony Stark in "Iron Man." **Clay Risen**

5. This 15-minute shampoo treatment begins when you lean your head back into a machine that looks like a sink at the salon. First it maps your scalp, then it shoots streams of warm water and foam shampoo from its 28 nozzles before 24 silicone "fingers" work up a lather. One conditioning mist, scalp massage and light blow-dry later, you're done. **Nathaniel Penn**

Tim Wu

Author of "The Master Switch: The Rise and Fall of Information Empires"

What are your two best million-dollar ideas?

The first is permanent sunblock. No one likes putting the stuff on, so there should be a one-time treatment that embeds the skin with a permanent level of S.P.F. 30, akin to having Lasik eye surgery once and then forgetting about it. Sunburn vanquished like smallpox. The other is the "brain map" — a technology that maps out every neural connection in your mind and then, effectively, stores your brain on your hard drive. That information — more than your DNA even — is you.

6. Traffic jams can form out of the simplest things. One driver gets too close to another and has to brake, as does the driver behind, as does the driver behind him — pretty soon, the first driver has sent a stop-and-go shock wave down the highway. One driving-simulator study found that nearly half the time one vehicle passed another, the lead vehicle had a faster average speed. All this leads to highway turbulence, which is why many traffic modelers see adaptive cruise control (A.C.C.) — which automatically maintains a set distance behind a car and the vehicle in front of it — as the key to congestion relief. Simulations have found that if some 20 percent of vehicles on a highway were equipped with advanced A.C.C., certain jams could be avoided simply through harmonizing speeds and smoothing driver reactions. One study shows that even a highway that is running at peak capacity has only 4.5 percent of its surface area occupied. More sophisticated adaptive cruise control systems could presumably fit more cars on the road.

Tom Vanderbilt

- When a quarter of the vehicles on a simulated highway had A.C.C., cumulative travel time dropped by 37.5 percent.

- In another simulation, giving at least a quarter of the cars A.C.C. cut traffic delays by up to 20 percent.
- By 2017, an estimated 6.9 million cars each year will come with A.C.C.

Rob Vandermark of Seven Cycles imagines his dream commuter bike. Alex French

7. Anti-theft handlebars

Here's an old idea whose time has come again. The bearing system that allows the bike to turn can be locked so that a thief can't steer his stolen bike. The lock is internal, meaning that he'd have to destroy the bike to ride it away.

8. No more greasy chains

An updated shaft drive — which replaces the chain with a rod and internal gear system — would be perfect for urban riders. They're popular in China right now, but new versions will be lighter and have more sophisticated gearing.

One-piece plastic and carbon-fiber frames

9. Plastic frames were tried back in the '90s, but they were too heavy. The materials and technology have improved. Thermoplastics are cheap and practically impervious to the elements.

10. Your car is already able to call for help when an accident occurs, but within a few years, it'll tip paramedics off to probable injuries too. E.M.T.'s would know the likelihood of internal bleeding or traumatic head injury, for example, before arriving on the scene, which would help them decide whether to move you to a Level 1 trauma center or a standard emergency room. Researchers at the University of Michigan International Center for Automotive Medicine have created the predictive models by cross-referencing the crash data provided by sensors on cars, like speed and location of impact, with 3-D scans of accident victims. **Tamara Warren**

11. The typical plane cabin is drier than the Arizona desert, and the air is so thin it feels as if you were visiting Machu Picchu. This brutal environment contributes to the parched, exhausted feeling you get after you fly. But there are already planes in the air — made mostly of carbon fiber — that solve this problem. Carbon fiber is markedly stronger by weight than the aluminum used for most existing planes, which means that the interior air pressure can be adjusted to more comfortable levels without the risk of damaging the fuselage. Airlines also keep humidity levels low now to prevent the plane's metal skin from corroding, but carbon fiber doesn't rust. That will allow a new system to maintain humidity at a more comfortable 15 percent (up from around 5 to 10 percent). Japan Airlines and Nippon Airlines bought the first crop of these new planes. They're currently in service between Tokyo and Boston. **Jad Mouawad**

12. The industrial designer Jiang Qian has conceived of a subway strap that's also a video game. It has a button on each side that you push with your thumb as you hang on; instead of a joystick, you control movement by twisting the handle from side to side. Jiang imagines that new types of games could be created, where keeping your balance while the train is in motion is part of the

challenge. And unlike Angry Birds on your phone, Strap Game (that's the official name) will alert you when your stop is approaching. **Jenna Wortham**

Peter Schwartz, Futurist and film consultant

What technology that you wanted to put into a film were you not able to because it seemed too far-fetched?

In "Minority Report," Tom Cruise gets into a car that drives itself. We considered giving him neural control of that car, but we deliberately held back on how far biology could go. It would have overwhelmed the story. And here we are today with real neurological control of machines. It's transformative technology. In 50 years, you'll be able to drive cars with your mind.

13. If you slump down when you're typing on an ErgoSensor monitor by Philips, it'll suggest that you sit up straighter. To help office workers avoid achy backs and tired eyes, the device's built-in camera follows the position of your pupils to determine how you are sitting. Are you too close? Is your neck tilted too much? Algorithms crunch the raw data from the sensor and tell you how to adjust your body to achieve ergonomic correctness. The monitor can also inform you that it's time to stand up and take a break, and it will automatically power down when it senses that you've left. **Jason Fagone**

14. When you aim the SpeechJammer at someone, it records that person's voice and plays it back to him with a delay of a few hundred milliseconds. This seems to gum up the brain's cognitive processes — a phenomenon known as delayed auditory feedback — and can painlessly render the person unable to speak. Kazutaka Kurihara, one of the SpeechJammer's creators, sees it as a tool to prevent loudmouths from overtaking meetings and public forums, and he'd like to miniaturize his invention so that it can be built into cellphones. "It's different from conventional weapons such as samurai swords," Kurihara says. "We hope it will build a more peaceful world." **Catherine Rampell**

Researchers at Wharton, Yale and Harvard have figured out how to make employees feel less pressed for time: force them to help others. According to a recent study, giving workers menial tasks or, surprisingly, longer breaks actually leads them to believe that they have less time, while having them write to a sick child, for instance, makes them feel more in control and "willing to commit to future engagements despite their busy schedules." The idea is that completing an altruistic task increases your sense of productivity, which in turn boosts your confidence about finishing everything else you need to do. **Catherine Rampell**

15. A team of Dutch and Italian researchers has found that the way you move your phone to your ear while answering a call is as distinct as a fingerprint. You take it up at a speed and angle that's almost impossible for others to replicate. Which makes it a more reliable password than anything you'd come up with yourself. (The most common iPhone password is "1234.") Down the line, simple movements, like the way you shift in your chair, might also replace passwords on your computer. It could also be the master key to the seven million passwords you set up all over the Internet but keep forgetting. **Chris Wilson**

Jonathan Zittrain, Harvard professor of law and computer science

What innovation scares you the most these days?

16. The Internet is not merely connecting computers together for the benefit of humans; it's connecting humans together to reinvent labor. This opens terrific opportunities along with real worries. Soon we'll have to question whether an earnest-looking group of protesters with hand-lettered signs is genuine or simply rapidly convened as a paid flash mob: a crowdsourced crowd. We'll be able to one-click shop for cheering throngs or protests at a particular location on a moment's notice, indistinguishable from genuine collective sentiment. A house can be surveilled and a spouse tailed because an online bounty has been put out for anyone nearby to take a photo of the building at a particular address, or to "follow that car."

17. Two Norwegian psychologists think that modern playgrounds are for wimps. Instead of short climbing walls, there should be towering monkey bars. Instead of plastic crawl tubes, there should be tall, steep slides. And balance beams. And rope swings. The rationale is that the more we shield children from potential scrapes and sprained ankles, the more unprepared they'll be for real risk as adults, and the less aware they'll be of their surroundings. Leif Kennair and Ellen Sandseter's ideas have won the support of playground experts on both sides of the Atlantic; one company, Landscape Structures, offers a 10-foot-high climbing wall that twists like a Möbius strip. **Clay Risen**

18. What's the new psychological trick for improving performance? Strategic lying. When amateur golfers were told, falsely, that a club belonged to the professional golfer Ben Curtis, they putted better than other golfers using the same club. For a study published in March, human cyclists were pitted against a computer-generated opponent moving at, supposedly, the exact speed the cyclist had achieved in an earlier time trial. In fact, the avatars were moving 2 percent faster, and the human cyclists matched them, reaching new levels of speed. Lying is obviously not a long-term strategy — once you realize what's going on, the effects may evaporate. It works as long as your trainer can keep the secret. **Gretchen Reynolds**

19. On traditional roller coasters, your weight is centered over the wheels, but two new coasters — the X Flight at Six Flags Great America and Dollywood's Wild Eagle — have you hanging off the side of the track, dangling in midair. It's kind of like you're sitting on the wings of a plane. The Swiss company Bolliger & Mabillard had to completely reimagine the seat design to handle the stress caused by the differently distributed weight. **Cora Currier**

20. Researchers at Imperial College London are closing in on a formula for a new kind of booze — synthetic alcohol, it's called — that would forever eliminate the next morning's headache (not to mention other problems associated with drinking). The team, led by David Nutt, a psychiatrist and former British drug czar, has identified six compounds similar to benzodiazepines — a broad class of psychoactive drugs — that won't get you rip-roaring drunk but will definitely provide a buzz. According to Nutt, the alcohol substitute would be a flavorless additive that you could put in a nonalcoholic drink. And when you want to sober up, all you'd have to do is pop a pill.

Clay Risen

David Pogue New York Times tech columnist

What tech problem needs to be addressed most urgently?

That we're heading for a bandwidth crunch. We're saddling the Internet with amazing new features — movies on demand, streaming TV, Siri voice recognition, whole-house backup — but they're starting to overwhelm the existing Internet's capacity, especially on cellular networks. The Internet and phone companies respond by imposing monthly limits, and the F.C.C. is trying to make more wireless frequencies available. But unless something gives, "high-speed Internet" will soon become an oxymoron. You'll just have to get used to pauses in your streaming video.

21. In February, Chaotic Moon Labs began testing a robotic shopping cart that acts a bit like a mind-reading butler. To start it up, you can text message the cart's built-in tablet computer. Now it knows who you are and what you need for dinner. The cart uses Microsoft's Kinect motion-sensor technology to track and follow you through the store, pointing you — in a synthy voice reminiscent of a G.P.S. navigator — toward products on your list. The system will also warn you if you've added something that violates your dietary restrictions. Still only a prototype, the cart isn't nearly as nimble as its human-powered cousin, but it does have one main advantage. Items you add to the cart can be automatically scanned, and you can finalize your purchase from the device, skipping the checkout line entirely. **Farhad Manjoo**

22. A movie projector flashes 24 images across the screen each second to create the illusion of motion — kind of like a flipbook. The directors James Cameron and Peter Jackson propose kicking that number to 48 or even 60 frames per second. It'll change the way we experience movies: colors will appear brighter, images sharper, motion smoother. Steven Poster, president of the International Cinematographers Guild, says the effect can be "almost holographic in quality." Proponents say it's what 3-D was supposed to feel like — a kind of immersive reality. Still, the image quality takes some getting used to. At an industry conference where Jackson previewed scenes featuring higher-frame-rate hobbits, critics complained that the hyperclarity made the scenes look like live television rather than cinema. It will doubtless take some getting used to. "When sound came out, a lot of people said this will last about three years," says cinema-studies professor Tom Gunning of the University of Chicago. "Instead it became totally dominant and wiped silent film off the map." **Addie Morfoot**

A Short History of Frame Rates

23.

23. Scientists at Princeton and Tufts are working on a superthin tooth sensor (a kind of temporary tattoo) that sends an alert when it detects bacteria associated with plaque buildup, cavities or infection. It could also notify your dentist, adding an extra layer of social pressure to make an appointment. The sensor may have wide-ranging use: the researchers have already used it to identify bacteria in saliva associated with stomach ulcers and cancers. While the sensor won't last long on the surface of a well-brushed and flossed tooth, Michael McAlpine, the project's leader, says that the sensors will be inexpensive enough that you can replace them daily. **Clay Risen**

24. Wearing a small sensor on your head, at home, while you sleep, could be the key to diagnosing diseases early and assessing overall health. "This tech," says Dr. Philip Low, the founder of a medical technology firm called NeuroVigil, "enables us to look for faint signals of, say, schizophrenia, Parkinson's, depression or Alzheimer's in the brain, even though there may

be no obvious symptoms.” Thus far, Low’s device has found a number of applications: evaluating children with autism, studying the efficacy of trial-phase drugs and assessing traumatic brain injury in soldiers. Currently, Low is working on a newer version of the device, which will be the size of a quarter and will transmit brain scans directly to smartphones and tablet computers. “We’re using sleep,” Low says, “as the gateway to the brain.” **Howie Kahn**

Jacqueline Barton 2010 National Medal of Science winner What innovation are you clamoring for?

What I’d really love to see is full genomic sequencing at moderate costs that individuals can do at home. When taking a given drug or even deciding what to eat or how much to exercise, wouldn’t it be good to know what you really need to be concerned about and what you don’t? If you had high cholesterol, you could know if you should really be taking a statin, which, based on your particular genomics, could have limited benefit and some associated risk.

25. This year, Eva Redei, a professor at Northwestern’s Feinberg School of Medicine, published a paper that identified molecules in the blood that correlated to major depression in a small group of teenagers. Ridge Diagnostics has also started to roll out a test analyzing 10 biomarkers linked to depression in adults. “Part of the reason there’s a stigma for mental illness, including depression, is that people think it’s only in their heads,” Redei says. “As long as there’s no measurable, objective sign, we’re going to stay in that mind-set of ‘Just snap out of it.’” Blood tests will take mental illness out of the squishy realm of feelings. And as Lonna Williams, C.E.O. of Ridge Diagnostics, says, they’ll help people understand “it’s not their fault.” **Elizabeth Weil**

26. Researchers at the Wyss Institute for Biologically Inspired Engineering at Harvard are working on a technology that would make household cleaning supplies much smarter — almost like a sprayable forensics team. When the spray hits a surface where there are pathogens present, like your bathroom sink, it would bind to the bad stuff and turn a color — orange, say, for *E. coli*. Then you could knock it out with a stronger disinfectant. **Nathaniel Penn**

27. You need a lot of water to put out a sizable blaze, and the chemicals used in fire extinguishers can be toxic (halons, the most effective chemical fire suppressant, create holes in the ozone layer). So the Defense Advanced Research Projects Agency at the Pentagon has developed a hand-held wand that snuffs out fires, without chemicals. According to the program’s manager, Dr. Matt Goodman, an electric field destabilizes the flame’s underlying structure rather than blanketing the fire to smother it. Eventually, the technology could be used to create escape routes or extinguish fires without damaging sensitive equipment nearby. **Nathaniel Penn**

28. Frozen food may soon be on par with anything you can get at a three-star restaurant. *Sous vide* — a process in which food is heated over a very long period in a low-temperature water bath — has been used in high-end restaurants for more than a decade. (Thomas Keller and Daniel Boulud were early proponents.) But the once-rarefied technique is becoming mass market. Cuisine Solutions, the company that pioneered *sous vide* (Keller hired it to train his chefs), now supplies food to grocery stores and the U.S. military. Your local Costco or Wegmans may sell perfectly cooked *sous vide* lamb shanks, osso buco or turkey roulade. Unlike most

meals in the freezer aisle, sous vide food can be reheated in a pot of boiling water and still taste as if it were just prepared. And because sous vide makes it almost impossible to overcook food, it's perfect for the home cook. Fortunately, sous vide machines are becoming more affordable. "It's like the microwave was 30 years ago," Keller says. **Michael Ruhlman**

29. It's depressing to think how much food packaging there is in your kitchen right now — all those juice cartons, water bottles and ice-cream containers. But what if you could eat them? "We've got to package in the same way nature does," says a Harvard bioengineer named David Edwards. And so he has devised a way to convert foods into shell-like containers and films that he calls Wikicells. Yogurt will be encased in a strawberry pouch, for instance. You could wash and eat the packaging, like the skin of an apple, or you could toss it, like the peel of an orange, since it's biodegradable. The newly wrapped ice cream and yogurt will be available later this month at the lab store in Paris, with juice and tea coming within the next year or two.

Nathaniel Penn

30. Rather than spray water, fertilizer and pesticides across their fields, many industrial farms are taking a more targeted approach, using wireless soil sensors and G.P.S.-enabled equipment to determine which spots need the most attention. Soon, you'll be able to use similar technology in your front yard. The home landscaping company Toro already has a line of consumer-grade moisture sensors that turn on the sprinkler system when your lawn is dry. It's a good start, but Sanjay Sarma, of the Field Intelligence Lab at M.I.T., is working to produce tiny, inexpensive sensors that you scatter across your lawn by the dozens and that will track everything from bug infestations to mineral deficiencies. Then they'll tell you what to do about it: three spritzes of pesticide to the tomato plants, stat. **Howie Kahn**

31. Petting a living animal has long been known to lower blood pressure and release a flood of mood-lifting endorphins. But for various reasons — you're at work, or you're in a hospital, or your spouse is allergic to dogs — you can't always have a pet around to improve your mental health. So researchers at the University of British Columbia have created something called "smart fur." It's weird-looking (essentially just a few inches of faux fur) but its sensors allow it to mimic the reaction of a live animal whether you give it a nervous scratch or a slow, calm rub. Creepy? Yes. But effective. **Clay Risen**

32. Researchers at Merck have created a pill called suvorexant that essentially makes you a narcoleptic for a night. It turns out that might be the best cure for insomnia. Unlike existing sleep aids, the drug (which will likely be reviewed by the F.D.A. later this year) works by turning off wakefulness rather than by inducing sleep. "There's good reason to believe this pill brings on more R.E.M. sleep and better rest," says Dr. Emmanuel Mignot of Stanford University. "It'll be less of a hammer on the brain." **Howie Kahn**

Margaret Atwood Novelist

Is there any invention you find particularly sinister?

A smaller, even stealthier drone — something called the Cyberbug Drone, currently under development. In this model, a microsystem is embedded in an insect larva, and when the adult emerges — whether bee, butterfly or ant — a "bug" really will be a bug, and the proverbial fly

on the wall will be actual. Tiny winged avengers can hunt down invasive beetles, cabbage whites can snoop on destructive raccoons and six-legged nanospies can insert themselves into the air-conditioning systems of even the most impenetrable buildings. As for bedbugs, they'll wedge themselves under mattresses to snoop on errant spouses. The hive mind really will be the hive mind! Coming soon to a crevice near you.