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The way you type on your computer's keyboard is as unique as your handwriting, and may even be a matter of national security, says an Iowa State University engineering professor.

The U.S. Department of Defense, looking for better ways than hacker-prone passwords to protect its systems, is betting a \$500,000 research grant that ISU professor Morris Chang is right.

MORE ONLINE

Watch an explanation of the research project at youtube/fgNpOzvwOiu.

Chang, an associate professor of electrical and computer engineering, said we all take unique pauses between keystrokes, especially when typing complicated words.

"When you spell a particular word, you may have a tendency to pause at a certain character," Chang said. "Your pause would be different than mine."

The Defense Advanced Research Projects Agency, part of the Defense Department, wants a security system that doesn't rely on passwords and is capable of continuously ensuring that the authorized user is the only one on any particular computer.

A system that can tell who is

KEYBOARD IDENTIFICATION

An Iowa State University engineering professor hopes to develop a security system for the U.S. Department of Defense that can identify who is using a computer by tracking unique pauses between keystrokes, especially when typing complicated words.

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SCOTT LESTER/REGISTER ILLUSTRATION

by the public — the chance that consumers ignore or miss a recall could ultimately harm their health.

Consumers last year were deluged with 2,363 recalls, an average of about 6.5 recalls each day. The list includes pharmaceuticals, toys, electronics, services and food, according to data from the U.S. Food and Drug Administration, the U.S. Department of Agriculture and the Consumer Product Safety Commission. The commission announced a 10 percent increase for 2010 and compared it to 1,460 in 2007.

Experts say the increase is the result of a combination of factors, including greater oversight by regulators, better testing procedures and the use of social media.

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Christine Ferguson, a former policy expert, worked for Gov. M. ...

Messy fallout after health care reform

By **RICARDO ALONSO-ZALDIVAR**
Associated Press

WASHINGTON — It sounds like a familiar line: Even if the Supreme Court overrules President Barack Obama's health care law, employers can keep offering popular coverage for the young adults and children of their workers.

But here's the catch: The parents' health insurance would go up. That's only one of the potential messy effects when the

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Consumers last year were deluged with 2,363 recalls covering consumer products, pharmaceuticals, medical devices and food, according to government data. Mike Zembajgier of Stericycle ExpertRecall, which helps companies carry out recalls, warns there is "recall fatigue" at the consumer level, which could be dangerous. GANNETT PHOTO

act number of pills that so could have been out of sequence, increasing the chance of an unintended pregnancy. IKEA asked its customers to return about 9,000 high chairs because the restraint buckle loosened unexpectedly. And one warned the public not to eat a lettuce salad mixture to a possible health risk from salmonella.

Retailers and government regulators are increasingly struggling to reach people who may not know about a recall, or choose to ignore it despite the potential dangers. A 2009 study conducted by Rutgers found 12 percent of Americans ate food they knew had been recalled and 40 percent admitted never having looked for recalled products in their homes.

Increasingly, retailers and government agencies are expanding the methods they use to communicate with the public — from Twitter and Facebook to more traditional methods such as phone calls and postings within their stores. But the same methods that prove successful in reaching one customer could just as easily be ignored by another.

The Hy-Vee grocery chain has a detailed recall plan in place for its stores,

which regularly stock as many as 50,000 items. The West Des Moines-based company's 235 stores follow a recall protocol increasingly common among retailers: posting information on its Web page and in stores for customers, and notifying its followers using social media tools.

Hy-Vee spokeswoman Ruth Comer said the retailer and other grocery chains have made improvements that allow them to disseminate information on recalls more quickly and with more detail than ever before, but she said they can only do so much and some of the responsibility lies with the public.

"Our responsibility is to try to get the word out ... and let the customers decide what they need to do with it," said Comer. "I'm not sure what as a retailer we can do to prevent or mitigate recall fatigue. We could stop sending so many recalls, but that seems kind of counterproductive."

Costco, the 602-store warehouse chain, uses data supplied from its estimated 60 million club card-carrying members, and notifies them within 24 hours if they've purchased a recalled item. It then follows up with a letter.

The result is that customers return about 90 per-

cent of recently recalled products. In the case of major recalls such as when a food product could cause serious health problems or death, Costco gets "the majority of everything that was sold back," said Craig Wilson, vice president for quality assurance and food safety at the warehouse giant.

Wilson says the national recall system "doesn't work as designed" and that consumers and retailers alike would benefit from a single, uniform network. He says the CPSC, USDA and FDA each have a different recall system with unique requirements, making it more difficult for companies like his to make sure they are complying with the rules.

Businesses can ease the burden of a recall on their reputation and bottom line by being honest and upfront with their customers and crafting a response plan before any recall occurs that outlines what they will do with the public, media and regulators, industry watchers say.

"Many companies are being criticized not because they are not doing the right thing but because they are taking too long," said Sophie Ann Terrisse, chief executive of STC Associates, a brand-manage-

ment firm.

She said some firms fail to estimate the work needed to conduct a recall and quickly become overwhelmed, leading to slow responses or poor customer service from representatives who don't have the time or know-how to respond properly. "Things can get out of hand very quickly and it's hard to recover from that" for the brand and the company's core audience, said Terrisse.

Some businesses have managed to take a recall and turn it into a marketing bonanza that benefits the company. Two years ago, McDonald's took the unusual step of paying customers a premium to return Shrek glasses to the restaurants following concerns that paint used to depict characters on the glasses contained cadmium — a carcinogen known to cause kidney problems.

"Mistakes can be made but the way they are dealt with is by being completely open and letting the customer become part of the recall," said Terrisse.

The U.S. Agriculture Department's Food Safety and Inspection Service improved its recall system in March by rolling out a Twitter feed that targets consumers only if their state is impacted. In the past, FSIS would send out a Tweet to the 250,000 people who follow everything that happens at the agency.

USDA Secretary Tom Vilsack downplayed the number of recalls that are announced, considering the number of products that are produced, items that are sold and meals consumed each day.

"I think people want to know and need to know and have a right to know if there is a problem with a particular product," said Vilsack. "We're going to look at ways in which we constantly improve how we communicate, but we're not going to stop communicating."

Register reporter Daniel P. Finney contributed to this story.



ISU professor Morris Chang is conducting research into keystroke patterns. SPECIAL TO THE REGISTER

TYPING

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using a computer by tracking those telltale pauses could block someone from, say, jumping on a computer and working after the authorized user signs off and leaves the building.

The military could use a fingerprint or retina scanner to accomplish similar results. But it also wants a technology that doesn't require equipment and would let it monitor usage without an imposter's knowledge.

"Let's say you walk to the office and start unlocking a computer," Chang said. "You work for a few hours, and then you may leave. So potentially there could be an intruder pretending to be you and continuing to use your computer. The system that we are trying to use is specific to the user."

More and more, such so-called "biometrics" are making news these days. A team of European scientists has theorized that people can also be identified by the way they bring a cellphone to their ear — the angle and speed, for example, the New York Times has reported.

Other studies are looking at how people move their computer mouse.

The technique is called "active authentication."

At ISU, some 3,000 students and staff members will log onto a website, from any location, to go through some tasks. They'll be asked to type some sentences, respond to an email, and surf the Web a bit.

Their keystrokes will be monitored in the background, and patterns will be analyzed.

Chang hopes to get research money for two more phases over the next three years. The second would involve developing soft-

er community really wants to see the whole thing overturned," said Kristine Ferguson, a health policy expert who



for ways to keep offering it even if there's no legal requirement to do so.

Many parents would pay higher taxes as a result be-

der community really wants to see the whole thing overturned," said Christine Ferguson, a health policy expert who was commissioner of public health in Massachusetts when Mitt Romney was governor.

"Even though this is not the most ideal solution, at least it is moving us forward, and it does infuse some money into the system for coverage," said Ferguson, now at George Washington University.

As the likely GOP presidential candidate, Romney has pledged to wipe Obama's law off the books. But he defends his Massachusetts law that served as a prototype for Obama's.

While it's unclear how the justices will rule, oral arguments did not go well for the Obama administration. The central issue is whether the government can require individuals to have health insurance and fine them if they don't.

That mandate takes effect in 2014, at the same time that the law would prohibit insurance companies from denying coverage to people with existing health problems. Most experts



There likely will be ripple effects from the U.S. Supreme Court's ruling this month on the Affordable Care Act. The law affects most major components of the U.S. health care system in its effort to extend coverage to millions of uninsured people. JACQUELYN MARTIN/ASSOCIATED PRESS

AFFORDABLE CARE ACT WHAT'S AT STAKE

The U.S. Supreme Court is expected to deliver a decision on the federal law requiring all Americans to be insured, a key piece of legislation for the Obama administration. The main issue is whether or not the government has the authority to require all citizens to have health insurance and fine them if they do not comply.

say the coverage guarantee would balloon costs unless virtually all people joined the insurance pool.

Opponents say Congress overstepped its constitutional authority by issuing the insurance mandate. The administration says the requirement is

permissible because it serves to regulate interstate commerce. Most people already are insured. The law provides subsidies to help uninsured middle-class households pay premiums and expands Medicaid to pick up more low-income people.

Families

The coverage for young adults up to age 26 on a parent's health insurance is a popular provision that no one's arguing about. A report last week from the Commonwealth Fund, a for-profit foundation focused on health systems, estimated that 6.6 million young adults have taken advantage of the benefit, while a new Gallup survey showed the uninsured rate for people ages 18 to 25 continues to decline, down to 23 percent from 28 percent when the law took effect.

Families will be watching to see if their 20-somethings transitioning to the work world will get to keep that newfound security.

Because the benefit is a winner with consumers, experts say many employers and insurers would look

for ways to keep offering it even if there's no legal requirement to do so.

Many parents would pay higher taxes as a result because they would have to pay for the young adult's coverage with after-tax dollars, said economist Paul Fronstin of the Employee Benefit Research Institute. Under the health care law, that coverage now comes out of pre-tax dollars.

Fronstin says there's no way to tell exactly how much that tax increase might be, but a couple of hundred dollars a year or more is a reasonable estimate. Upper-income taxpayers would have a greater liability.

"Adult children aren't necessarily dependents for tax purposes, but an employer can allow anyone to be on a plan, just like they now allow domestic partners," said Fronstin.

"If your employer said, 'I'm going to let you keep this,' it would become a taxable benefit for certain people."

Senior citizens

Advocates for the elderly also are worried about ripple effects.

If the entire law is overturned, seniors with high prescription costs in Medicare's "doughnut hole" coverage gap could lose annual discounts averaging about \$600. AARP Policy Director David Certner says he would hope the discounts could remain in place at least through the end of this year.

Yet that might not be possible. Lacking legal authority, Medicare would have to take away the discounts. Drugmakers, now bearing the cost, could decide they want to keep offering discounts voluntarily. But then they'd risk running afoul of other federal rules that bar medical providers from offering financial inducements to Medicare recipients.

"I don't think anyone has any idea," said Certner.

Chang hopes to get research money for two more phases over the next three years. The second would involve developing software to detect intruders based on typing patterns. The third would look for holes in the system.

"Everyone knows we have problems with passwords," said Richard Guidorizzi, the defense agency's program manager. People forget passwords, or make them too easily guessed by hackers, for example.

"I want to move to a world where you sit down on the console and you identify yourself and you begin working and the authentication happens in the background invisible to you while you continue to do your work without interruption," he said.

Guidorizzi said at the time that the Defense Department does not intend to use the results of the research to spy. Nor will the keyboarding data gathered to identify authorized users be stored.

"We don't want to store this information," he said. "Otherwise, hackers would get to that and the system would be worthless."

But some privacy advocates worry such safeguards could have negative consequences if misused.

Rebecca Jeschke of the nonprofit Electronic Frontier Foundation in San Francisco said such technologies could raise privacy questions, even if they also help match consumers with products they might want, for example.

"The freedoms and protections in the physical world need to come with us into the digital world," said Jeschke, a digital rights analyst. "The future I don't want is one in which you can't use a new tool because you don't know what information they will share."

She added: "To me, what's concerning right now is that people don't know when they are being tracked."

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