

# Speaker scrutinizes food safety in state

By ERIC DORMAN  
Features editor

A mere four grams of a toxic substance called botulinum toxin is all it would take to cause serious illness and death to 400,000 Americans, research microbiologist Paul K. Park revealed before a sparse crowd at the first Brown Bag Science Seminar of the semester last Friday.

Park, who works for the Food & Drug Laboratory Branch (FDLB) of the California Department of Health Services and also teaches microbiology part-time at Ohlone, outlined the susceptibilities of America's food system to this form of bioterrorism as well as many others. He also spoke on the role of California, and the FDLB, in preventing them.

Park underscored the susceptibility of the food system to bioterrorism with several examples from the past. These included the Rajneesh cult's 1984 spiking of salad bars with salmonella in Oregon in an attempt to influence an election, in which there were 751 reported cases, a 1989 incident where Chilean grapes were laced with cyanide, and the 2004 scare when it was reported that ricin, a deadly poison, had been added to baby food. The rumors later proved to be false, but the concern persisted.

Park's information about botulinum came from a Stanford study released in 2005, which the FBI unsuccessfully tried to suppress because of national security concerns. The study explained how a small amount of botulinum, which

occurs naturally in soil, could be added to a milk processing plant and sicken almost half a million Americans. Park said that of all the food borne poisons he could think of, he felt botulinum posed the biggest bioterrorism concern to the United States.

"Anyone with any sort of bioterrorism background could isolate [botulinum] from the soil and enter it into the milk supply," said Park. "It's very easy to do, and the results are catastrophic."

Park noted that whenever a natural outbreak or bioterrorism act occurs, the severity of the event is compounded not only because of the substance used, but also because of the nation's centralized and far-reaching food distribution system. For example, Park cited the spinach outbreak, in which the first case was reported in Wisconsin. Cases were reported all over both coasts before the culprit, E. coli 157, was traced to the Salinas valley.

As California leads United States in export, agriculture production and milk production, said Park, the state's role, and the FDLB's role as well, are especially important to the health of the nation's food supply. The first step, said Park, is preventing an outbreak in the first place, which is accomplished through education. However, the biggest step happens after the case has been reported and the source needs to be traced.

There are numerous hurdles that must be cleared along the way. The first is that even though people may get sick after eating something, they may not realize what it is caused by and report it. Thus, by the time the

outbreak is confirmed many people might already be sick.

The next hurdle, said Park, is tracing the substance that caused the outbreak. Since people generally eat many things between the time they eat the tainted substance and the time they become sick, it can be difficult to know the food that caused the problem. In the case of the E. coli spinach outbreak, the only way they were able to find out that spinach was the cause was because one of the victims who had to be hospitalized was discovered with an open bag of spinach.

But even after discovering the food—in this case, the spinach—and recalling it, said Park, an additional step was necessary: finding the contaminant behind the outbreak. This is where technology came into play. The FDLB used sophisticated technology that employed magnets and amino acid beads, among other things, to trap and isolate the E. coli bacterial DNA, which was then traced to a specific region in the United States, the Salinas valley. It is then that measures could be taken by the FDA and the owners of the fields in question to prevent further outbreaks.

Park noted that while threats of bioterrorism were very real, of the 76 million annual foodborne gastrointestinal illnesses in the U.S. the vast majority come not from bioterrorist acts but from natural causes. As examples, Park pointed to the 1985 salmonella outbreak, with 200,000 cases nationwide, 1993's E. coli 157 outbreak, caused by 157 undercooked Jack-In-The-Box hamburgers, the recent spinach E. coli 157 outbreak, and the even more recent cases of salmonella resulting from eating Peter Pan peanut butter.



Photo by Jack Husting

## Microbiologist Paul Park speaks on the inherent dangers of America's food system at Friday's Brown Bag Science Seminar.

Still, despite the relative scarcity of bioterrorist attacks so far, the FDA is still on the watch, said Park, aided by the Bioterrorism Act of 2002, which tightens control on food coming into the country and enhances controls on toxic agents coming into the country.

Park also said not to underestimate the power of a hoax on America. If someone, terrorist or

otherwise, started a rumor that a poison had been added to the food system, the panic that would result would be disastrous, said Park.

The Brown Bag Science Seminars are talks on science-related issues. They are free and open to the public.

The next Brown Bag will be Friday, March 9 about dark matter and cosmological expansion.

# U.S. fading in power

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United States' overall loss of money.

How, then, does an overall loss of money contribute to a loss of power? The answer lies in the fact that while money itself does not create power, the things that money can buy - a larger and more powerful military, an education system that can create leaders who can make better informed decisions and the ability to provide and cut off funding to other countries - can easily lead a country to power.

The war in Iraq also plays a part in America's loss of global power. Before Iraq, the U.S. was seen as invincible in terms of military ability; we could invade anywhere - Vietnam being a possible exception - and be sure to have our way.

But after almost four years of fighting a losing battle in an increasingly unstable country, America's formidable military image could be beginning to fade. The stakes of the U.S. losing another war would be enormous on a global scale.

America's military image is not the only image changing. While numbers of students graduating in science and technology, what many would call the building blocks of American power, continue to slip, the U.S. is fast being viewed as the "sports and armchair capital

of the world." This is not entirely without reason; MSNBC reports that more people graduated in 2006 with sports-exercise degrees than electrical-engineering degrees.

While it is true that America has endured highs and lows in the past, including an Arab oil embargo in the 1970s that sent gas prices and American concerns skyrocketing, never before have there been nations so eager to capitalize.

China and India, which already make many of the products America buys, are both eager to become a larger part of the world market. As long as China and India combined graduate 950,000 engineers every year to America's 70,000 and those 950,000 engineers work for 11 times less pay than Americans, China and India stand to gain a huge part of the world market in the near future.

History has proven that no nation can lead the world forever. The Roman Empire rose and fell, as did the British Empire, despite the fact that throughout both the citizens were certain that no nation could ever rise above theirs.

America is no exception. As long as we let the world's science and technology jobs slip away to other nations, we must accept the fact that the United States will not lead the world forever.

## Red Cross blood drive next week

The American Red Cross will hold a blood drive next Tuesday, March 13 in the cafeteria from 9 a.m. to 3 p.m.

Appointments may be scheduled online at

[www.givelife.org/index.cfm?group=registration&hlc=ohlone](http://www.givelife.org/index.cfm?group=registration&hlc=ohlone).

You must be at least 17 years old, weigh at least 110 pounds and be in good health to give blood.

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