



Health & Science I

SATURDAY, OCTOBER 20, 2007

THE NEW MEXICAN

Food-service inspections

Food-service inspections from the state Environment Department. To report a complaint, call 827-1840.

Ace Sushi

600 N. Guadalupe St.

One violation: During a regular inspection, an inspector cited the establishment with one high-risk violation because someone had placed a bowl in the hand-washing sink. The inspector approved the establishment's permit and did not require a follow-up inspection.

Agua Fría Elementary School

Agua Fría Road

No violations during a regular inspection. "Very clean facility," the inspector noted. "Well organized."

Body, Inc.

330 Cordova Road, Suite 200

One violation: During a regular inspection, an inspector cited the establishment with one moderate-risk violation because three refrigerators were missing thermometers. The inspector approved the permit and did not require a follow-up inspection.

Capital High School

4851 Paseo del Sol

No violations during a regular inspection.

Chuck Higgins, LLC

847 Niñita St.

No violations during a regular inspection. "Clean, efficient kitchen," the inspector noted.

Comfort Inn kitchen

4312 Cerrillos Road

Three violations: During a regular inspection, an inspector cited the establishment with one high-risk violation because personnel were not sanitizing equipment and utensils. The inspector also cited the establishment with one moderate-risk violation because a chlorine test strip was not available. In addition, the inspector cited the establishment with one low-risk violation because boxes were stored on the floor in dry storage. The inspector approved the permit and did not require a follow-up inspection.

Contoured Cooking

112 W. San Francisco St.

No violations during a regular inspection. "Extremely clean, very well managed," the inspector noted.

Courtyard Cafe Santa Fe

3347 Cerrillos Road

No violations during a regular inspection. "Clean facility," the inspector noted.

El Dorado

Elementary School

2 Avenida Torreon

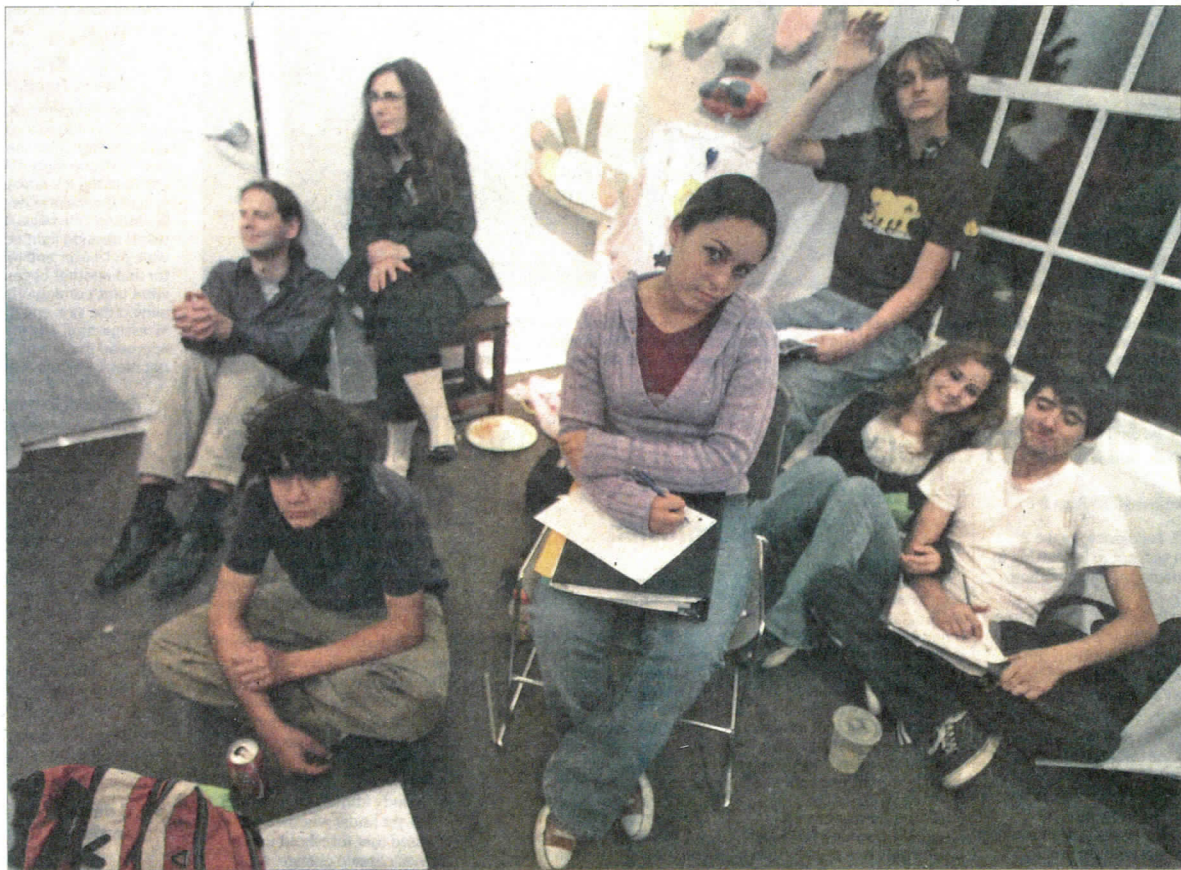
No violations during a regular inspection. "Good operation," the inspector noted.

El Pollo Real

3252B Cerrillos Road

Three violations: During a

SANTA FE SCIENCE CAFÉ FOR YOUNG THINKERS



Photos by Natalie Guillén/The New Mexican

Allyssa Duran, center, a student at Santa Fe High School, listens as Bette Korber, a Los Alamos National Laboratory biologist, leads a discussion at the Georgia O'Keeffe Museum's Education Annex on the potential for creating an HIV vaccine.

Hunting for a vaccine

Scientists might never be able to completely eliminate HIV, biologist says, but they might be able to at least keep the deadly virus in check

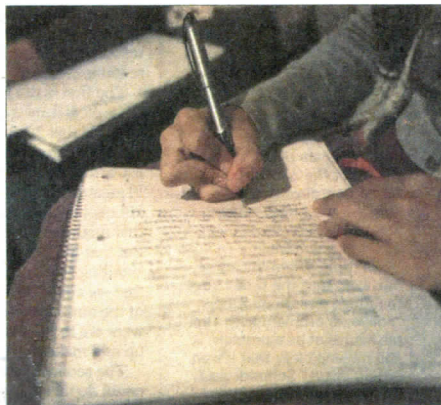
By Wendy Brown
The New Mexican

Bette Korber is a biologist at Los Alamos National Laboratory who would like nothing more than to develop a vaccine for the human immunodeficiency virus, or HIV. But doing so hasn't been easy.

Korber spelled out why it has been such a difficult task Tuesday evening in front of nearly 100 middle- and high-school students at the Georgia O'Keeffe Museum Education Annex. It was part of a series of talks sponsored by the Santa Fe Alliance for Science.

Most of the students who attended the talk were from Monte del Sol Charter School, but some of the students were also from St. Michael's High School, the Santa Fe Preparatory School and Santa Fe High School, said Bob Eisenstein, a founder of the Santa Fe Alliance for Science.

Korber said the biggest challenge in developing a vaccine for HIV is that the virus is always changing



Flor De Luna takes some notes during Korber's talk. The talk was the second Santa Fe Science Café For Young Thinkers talk in a series of six scheduled for this school year.

and has many strains. A tree Korber used to show the number of variations in a flu virus, which has a vaccine, was tiny compared to a tree showing the variations in HIV.

The HIV virus is so diverse that scientists might never be able to develop a vaccine to stop infections, Korber said, but they might be able

to develop one that can keep it in check.

"It's frustrating, but I think it's worth continuing to try," Korber said.

Korber holds a Ph.D. in immunology from the California Institute of Technology and is an external professor at the Santa Fe Institute,

a nonprofit research and education center. She has helped lead an HIV sequence and immunology database project at the lab for the past 10 years. HIV causes AIDS, which killed 2.9 million people worldwide last year.

And that is one of the reasons Korber said it is so important to keep trying to develop a vaccine. About 40 million people are infected with HIV worldwide, she said.

The quest to develop a vaccine for HIV started more than 25 years ago with the discovery of the virus, Korber said.

Since then, scientists have discovered the origins of the virus in Africa, Korber said.

Monkeys in Africa carry a similar virus called SIV, Korber said, and scientists believe it made the jump to human beings around 1930, becoming HIV.

Africans commonly eat monkey meat, and scientists believe the virus was transmitted by butchers

Please see **VACCINE**, Page D-2

pear quickly from the atmosphere, while the carbon dioxide stays for decades.

But even with their short life span, the particulates make a difference to the planet as long as they continue to be emitted, Schmidt said.

He also said the level of carbon dioxide is not 10 years ahead of predictions: "For 30 years it's been going up at the same track we've expected."

Flannery said his comments remain unchanged. "We're at the danger point for carbon-dioxide equivalent, but the effect is being masked in part, short-term, by other pollutants."

All three scientists agree, however, that the time to act to reduce emissions is now. "I have no problem with Tim pushing that as a problem and making clear that it's an urgent issue," Schmidt said. "When people have been saying you've got 10 years to act, it means you need to act as soon as possible."

We must act now; the 10 years is up.

Question: You talk about dangerous thresholds. Tell us what those are.

Answer: No one can say exactly what part of Earth's climate system will be stabilized or where the big threats will come, and I must say I've learned my lesson in trying to project what they might be and getting it wrong. I didn't predict in Australia the urgency with which the water issue would become evident. So I don't know which of the stresses are going to be the important ones in the next decade. But what we've got to watch out for is stresses that do to the human species what we see in the natural world, which is change their resource availability to the point where they become endangered.

We live in a global civilization, and we are intimately connected one to the other around the world. So changes in Afghanistan, as we see, have big impacts in the U.S. instantaneously. We all live in this global society, so if the stress is sufficient to start causing the breakdown of global law and order and global trade,

the amount in the atmosphere is on the order of 200 gigatons that's built up since 1800, since the beginning of the Industrial Revolution. If you look at how you might draw down that standing stock of gas pollution, we've got several tools in the toolkit that can do that already without resorting to some high-tech response.

The first is the regrowing of tropical forests. It's entirely possible that 20 years from now we'll be regrowing enough forest worldwide to be pulling 10 gigatons of carbon out of the atmosphere per annum. Now that might be the upper bounds. But that is 5 percent of the standing stock of the pollutant that we could be drawing out of the atmosphere per annum were we to get carbon trading up and make this happen. ...

The second big area where we could do that is in agriculture. The development of the pyrolysis-based technologies, which involve the partial burning of crop waste, allow us to sequester by 20 years from now, even less, 10 gigatons of carbon or thereabouts in our agricultural soils every year. So between the tropical forests and agricultural initiatives we have the potential to be drawing down the standing stock of the pollution by 10 percent per annum in just 20 years' time. So once you develop those technologies to that scale you can see that the extent to which you're committed to dangerous climate change is perhaps not as great as we previously imagined.

Question: Do we have the technology to decarbonize by the time we need to?

Answer: Yes, we do, and the Californians are rapidly proving that, with multibillion-dollar investments now in concentrated P.V. (photovoltaic) technologies and in solar-thermal technologies to generate base-load electricity. That is a quantum leap. We're already there with that. We're getting very close to being there with geothermal power. So I'm absolutely confident that we'll get there.



A longer version of this interview is available at www.santafenewmexican.com.

the hand-washing sink was broken and unusable and another because the inspector observed an employee

old refrigerator in use. The inspector approved the establishment's permit and did not require a follow-up.

Vaccine: Some seem to be immune to HIV

Continued from Page D-1

who had contact with monkey blood, Korber said. HIV is transmitted by having sex with an infected person, by sharing needles or syringes, through blood transfusions or other blood-to-blood contact.

Scientists found the first sample of HIV in the Democratic Republic of Congo, where scientists had frozen samples of various diseases, Korber said. The sample was from 1959, she said.

Scientists were able to determine that the virus probably made the leap to humans around 1930 by studying how it evolved, Korber said.

Transmission of the disease started slowly, but the practice of using one needle to vaccinate numerous people, as well as an increase in the number of roads and railways in Africa, caused increased numbers of infected people in Africa, Korber said.

One reason the medical community did not become aware of HIV and AIDS sooner is because people often died of other causes sooner, Korber said. "It was hard to pick this out as a unique and new disease," she said.

In addition, since the disease attacks the immune system, it presents itself in a variety of ways, Korber said.

Korber said she has known several people who have died of HIV and AIDS.

One man developed dementia at the age of 29, Korber said, and another wasted away with sores all over his body at the age of 25. "HIV has lots of ways to take you," Korber said.

There are many other diseases that are transmitted from animals to humans, Korber said, and there are several in New Mexico — the plague, West Nile Virus and Hantavi-

rus to name a few. The name for the phenomenon is zoonosis.

Responding to questions from the audience, Korber said SIV, a cousin to HIV, does not make monkeys sick.

And it appears there are some people who are immune to HIV, Korber said, but they are rare.

One student asked Korber if she thought humans could ever become immune to HIV in the same way monkeys are immune to SIV. Korber said she thought it was possible, but she would hate to see the devastation that would occur before it happened.

And there is promise for treating HIV, Korber said.

Korber said that in about a week, she and other scientists plan to start a small human trial involving a protein that has been effective in fighting the virus in monkeys.

In 1996, scientists discovered that giving HIV patients a cocktail of three drugs worked to keep people healthy for many years, Korber said.

Jackson Birnbaum, 15, a student at Santa Fe High School, said he sometimes feels patronized when at talks for teens, but not at Korber's talk. "It was really good," he said. "I learned a lot."

And Leah Tatom, 14, a student at Monte del Sol Charter School, said a man with AIDS visited her class in the sixth grade and taught her a lot about the disease, but about half of Korber's information was new to her.

Eisenstein said this was the second Santa Fe Science Café For Young Thinkers talk in a series of six scheduled for this school year. The next talk will be Nov. 12 by Geoff West of the Santa Fe Institute, who will talk about why size and scale matters in the animal kingdom.