

science & TECHNOLOGY

Prof garners grant for instruction

Veterinary students to learn about bioterrorism in academic environment

By NONI SRIDHARA
The Battalion

"Olympic Park bombing suspect sought." "Oklahoma victims remembered."

As these headlines flash across American newspapers, one thinks of terrorist attacks on U.S. soil and wonders when and if the next will take place. A recent terrorism threat less obvious than bombings is bioterrorism.

The United States spends \$10 billion annually to fight terrorism, and a large part of that sum goes toward fighting bioterrorism, the use of terrorism by infecting a country's animal, plant or water supplies.

One of the people fighting this match is Dr. Gale Wagner, a professor of veterinary pathobiology at Texas A&M. Wagner received a \$389,000 grant from the Department of Defense's National Security Education Program to develop a new curriculum on emerging diseases, food safety and bioterrorism. Wagner is cooperating his efforts with veterinarians at the University of Georgia as well as with veterinarians in Chile, Argentina and Brazil.

Wagner said he first decided to incorporate bioterrorism issues into the veterinary program after working with students in Mexico for the past 20 years. He said he believes that the United States will see a rise in the number of animal diseases in the future.

"As free trade increases, the animal diseases will increase, whether it is by accident or intention," Wagner said.

Wagner said veterinary students would be exposed to these different issues throughout the course of their veterinary schooling. He said he will use this grant to take several veterinary students, along with students of other disciplines, to Chile and ask them to write a report on the possibility of certain diseases posing a health threat.

"I would want them not only to focus on the health impact of these veterinarian diseases but also the severe social and economic consequences," Wagner said.

Wagner said they must identify areas that are

vulnerable to bioterrorism and prevent them from being targeted.

He said these issues need to be in the veterinary curriculum because veterinarians will be some of

Woteki said she does not think that free trade has raised the potential for a bioterrorist attack because of the existing openness of the food supply.

"Many analysts who study the security of the United States are very much concerned about organizations [both domestic and in other countries] that do have access to both biological agents that can cause disease as well as chemical agents. And, both agriculture and the food supply are very vulnerable because we are so open," she said.

Woteki said that some people fear that the agricultural market is being sought out to manipulate the futures market because approximately 16 percent of the U.S. gross domestic product comes from agriculture.

The Philadelphia Inquirer published an article in July reporting that many agencies were preparing for a possible anthrax attack at the Republican National Convention. According to the Inquirer, an Internet-based health surveillance system was created by the city's Department of Public Health in cooperation with the Centers for Disease Control and Prevention (CDC) and state health departments in Pennsylvania, New Jersey and Delaware.

Another article published in the May issue of the British Medical Journal titled "U.S. Plans Drugs Stockpile to Counter Bioterrorism Threat" references a statement from the CDC entitled "Bioterrorism Preparedness and Response." The CDC states that it is working to develop tools to detect biological and chemical agents on a national level, strengthen surveillance and enhance communication systems.

Wagner said the presumption is that the more discussion there is about such acts, the less likely it is that they will actually happen.

"I do believe we need to raise awareness, but I'm not an alarmist and don't believe in crying wolf," he said. "We have to remember to keep science as our basis and be cautious of expecting too much and reacting too quickly."

"The risk today [of bioterrorist attacks] is greater than ever, so our methods of prevention have to be greater than ever, too."



BRANDON HENDERSON/THE BATTALION

the first people to respond to acts of bioterrorism. He added that he is concentrating on South America because the United States trades a great deal with these countries. Wagner said the most significant outcome of this linkage between U.S. and South American veterinary colleges will be the reduction of the threat of infectious diseases of major health importance.

Vulnerability was the key word from Dr. Catherine E. Woteki, undersecretary for food safety at the United States Department of Agriculture, when she was asked about the potential for a bioterrorist attack on the United States.

"I think that the opportunity for terrorists to disrupt American agriculture and use the food supply as a vehicle for achieving their goals is a real potential threat," Woteki said.

Researchers transfer animal spinal tissue

(AP) — Scientists have successfully spliced pig cells into the injured spines of paralyzed mice and restored some nerve impulses.

In an additional twist, the pig cells were bioengineered with a human protein that helped to prevent the immune systems of the mice from rejecting the foreign tissue.

The study, conducted at Yale, provides the latest evidence yet that pigs may provide the most promising new source of cells and organs for transplant into humans.

Researchers said the experiment, published in the September issue of Nature Biotechnology, is also another step toward repairing spinal cord injuries.

"Though unthinkable only a decade or two ago, it now appears that reparative treatment for spinal cord injury may be within reach," said Lars Olson of the Karolinska Institute in Sweden, who reviewed the Yale experiment.

Researchers said the experiment shows how transplantation of cells and organs across species lines, known as xenografting, may prolong patients' lives and improve their health, at least until a human transplant became available.

Other researchers were surprised that the bioengineered pig cells were so readily compatible with the nervous systems of the mice.

Restoring nerve function with cell transplants is just one promising area, they said. As the immunological barriers are lowered, pigs also may provide humans with hearts, lungs, kidneys and livers.

Earlier this month, research groups in the United States, Japan and Scotland announced they had

successfully cloned pigs. But it may take several generations of laboratory-bred pigs over many years to weed out the genes that trigger immune-system rejection.

In the experiment, Yale researchers severed the spinal cords of mice. Then they implanted cells derived from the snouts of pigs. The pig cells were engineered to express a protein that suppresses the immune system's rejection for foreign tissue.

The pig cells were two kinds of nerve fiber-ensheathing cells - olfactory ensheathing cells, or OECs, and Schwann cells.

The researchers reported the pig cells served as a bridge across the mice's damaged spines, prompting new nerve connections and some regrowth of the myelin sheath that insulates nerves.

In seven of 10 mice, nerve fibers grew at a typical rate of 1 millimeter per day. The regenerated nerves conducted impulses faster than normal mouse nerves.

Other researchers said the mice did not regain motor function, but said the nerve impulse results were notable.

"Did the mice feel their toes? They didn't ask that question," said Naomi Kleitman of the Miami Project to Cure Paralysis. "They showed the axons were functioning, not that there is a functional connection all the way to the brain and a relay back."

Kleitman said the experiment also shows little performance difference between Schwann cells and olfactory cells. That could be important because Schwann cells are easier to obtain, she said.

gieland
Tuesday, August 29, 2000
COURTESY OF SPITUNE RECORDS
g this Wednesday at
new CD, Heritage Way
er set of tunes to go along
nding a quiet night engage
the poison of one's own
while chatting with some
ends.
all, the music is nothing
original. It is rather a
ing of thoughts, lyrics an
s that the listening publi
heard in a long time. In o
s, for a person who alrea
l of the '60s albums tha
n produced, this would b
addition to that collectio
se, it would be better t
buy an Elvis Costello CD
C+)
— Stuart Huson
ng It On
\$6,750 average, \$21.2
to weeks.
hat Lies Beneath, Dre
\$4.6 million, 2,568 loc
1,796 average, \$130.9
weeks.
he Replacements, War
\$4.1 million, 2,717 loc
\$1,500 average, \$3
three weeks.
he Crew, Buena Vis
million, 1,510 locatio
average, \$4.1 millio
ek.
Natty Professor II: T
Universal, \$3.6 millio
locations, \$1,400 aver
million, five weeks.
Autumn in New York
\$3.3 million, 2,260 loc
\$1,446 average, \$2
three weeks.

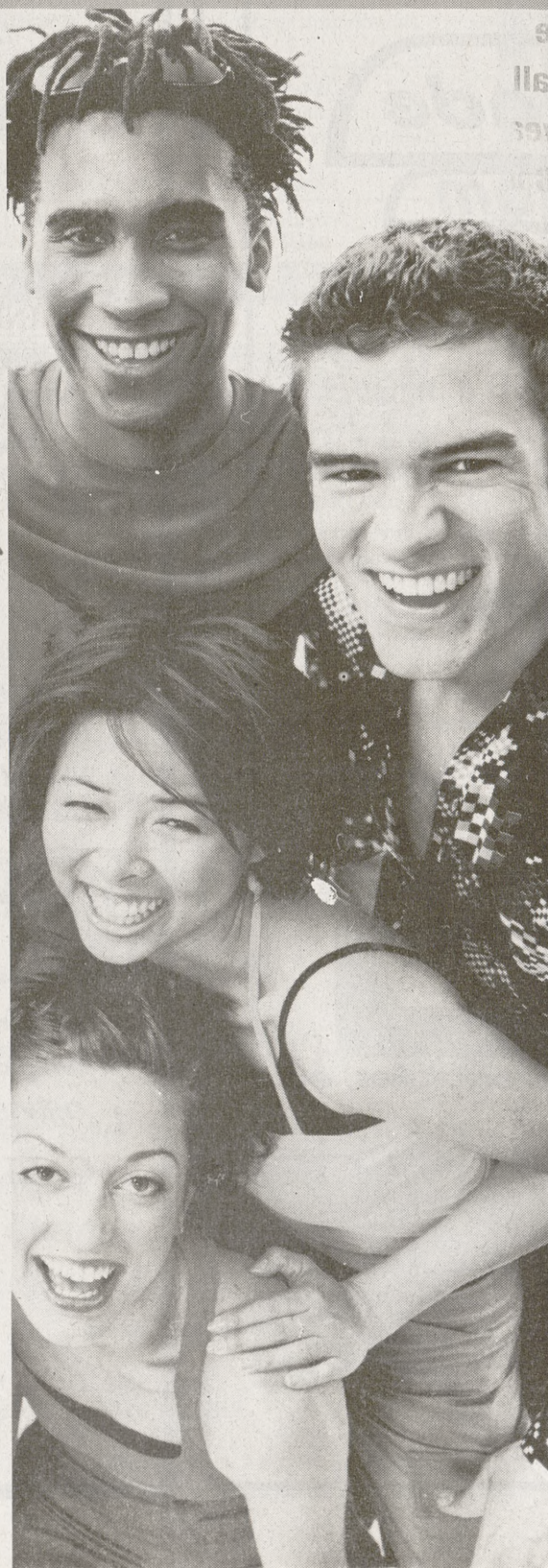
Here's your chance to join the university surfing team.

All you need is a knack for surfing the network and DSL — the always-on, high-speed connection to the university LAN. DSL from Verizon lets you do so much more. E-mail and chat with other students in real time. Conduct online research at breakneck speed. Submit and download assignments over the network. And, that's just the beginning.

For more details about DSL or to learn about special deals created just for students and staff, visit us online today.

<http://dsl.tamu.edu>

DSL service not available in all areas. Special equipment is required. DSL service is dependent upon local network conditions. Each phone line must be tested and qualified. Testing will be done at time of order.



10% off Student ID 3 day min. **Aggieland's Smart Alternative** **10% off Student ID 3 day min.**

- We rent to 18+ yrs. old
- Free Pick-up
- Discount w/ student ID
- Aggie owned & operated

Michael Carter
Class '97

RENTAWRECK

696-0296 www.rentawreck.com

REV IT UP!
REV'S INFO STATION
LEARN FROM EXPERIENCE

Welcome Back Aggies!!

Do you have general questions? Need help finding your way around? Don't really know the questions that you need to ask? Maybe we can help. Drop by Rev's Info Station for campus and community maps, bus routes, bike engraving, campus dining locations and more.

Dates: Tuesday, August 29th
Wednesday, August 30th

Location: Rudder Fountain

Times: 10:00am until 2:00pm (both days)

Contact: Student Life Orientation
845-5826