



Lanny David

A Concern of Epidemic Proportions



As a Chinese-born woman who has earned a national reputation for her investigations of the public health of Native Americans, the dean of the OU College of Public Health acknowledges that she is a bit of a curiosity. People do wonder how Elisa Lee got from China to Oklahoma and what spawned her interest in Native American health.

A tribal elder once attributed her affinity for his people to an ethnic link, pointing out that the original inhabitants of this hemisphere were believed to have migrated across the Bering Strait from Asia. And Lee says she does feel at home with Native Americans, whose allegiance to the extended family seems quite “Asian” to her.

*Elisa Lee traveled
the long road
from Nationalist China
to address
the health needs
of Oklahoma’s
Native Americans.*

BY JUDITH WALL
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A small, soft-spoken woman with an easy smile, Lee has received by far more external funding for her research than any other faculty member at the OU Health Sciences Center. Even though the College of Public Health is the smallest of the center’s seven colleges, it is second only to the vast College of Medicine in research grants—thanks in great part to Lee’s efforts.

Seated in her office in the building that once housed the medical school and now is home to the colleges of Public Health and Allied Health, Lee recalls her own migration to Oklahoma. She was born in Yunshing, a city in the southwestern province of Jaingxi. Her earliest memories are of family, school, a best friend, an annual peach blossom festival.

When she was nine years old, her family was forced to flee as advancing Chinese Communist forces drove Chaing Kai-shek and his Nationalist government from mainland China. Lee's father, as a member of Chaing's National Assembly, was allowed space for himself and his family aboard a military cargo plane carrying refugees to Taiwan.

Lee recalls the chaos at the airport, with frantic, frightened people hoping to get a place on the plane.

"I remember mountains of discarded luggage," Lee says. "To make room for more people, each family was allowed to take only one suitcase."

Possessions were not all her family left behind. The flight was limited to immediate family members, and Lee's foster brother and uncle were not allowed on board. She never saw either one of them again.

In Taiwan, her father resumed his position in the exiled government, and the family started a new life with only the contents of that one suitcase and very little money. Times were hard. Her brother found a job and helped support the family.

Lee's days were filled with school and homework. Doing well at school was important to her. There was no question, when the time arrived, that she would go to college. She enrolled at the National Taiwan University, where she followed her father's advice and majored in economics.

During her undergraduate years, she was exposed to statistics and decided to pursue a graduate degree in the discipline. And like her friend Sam Lee, Elisa decided that she would continue her education in the United States.

After passing a government exam to qualify for studying abroad, Elisa was ac-

cepted at several U.S. universities. She chose UC-Berkeley, where Sam just happened to be pursuing a graduate degree in electrical engineering.

After completing a master's degree at Berkeley, she enrolled at the University of Illinois, where Sam was continuing his graduate studies. It was not until Sam finished his Ph.D. that they were married.

What took them so long?

"We were poor graduate students," Elisa says with a shrug. "He was a research assistant. I was a teaching assistant. I guess it was a bit old style, but we thought we had to be financially solvent before we started

married life."

The couple then began following Sam's career. First he went to Bell Laboratories in New Jersey, where Elisa worked as a statistician. Next Sam joined the faculty at New York University, where Elisa earned a Ph.D. in statistics. During this busy time, their two daughters were born.

When NYU eliminated its electrical engineering program, Sam accepted a position at the University of Houston. In Houston, Elisa worked at M.D. Anderson Hospital as a cancer research statistician.

In 1975, Sam accepted an offer to join the up-and-coming OU School of Electrical Engineering. During a house-hunting visit in Norman, Elisa learned that there was a Department of Biostatistics and Epidemiology in the OU College of Public Health. She called the department chair, and he invited her to drop by.

As it happened, the department was involved in a cancer research project with the Oklahoma Medical Research Foundation and in immediate need of someone with precisely her background. A few days after her 30-minute visit to the Health Sciences Center, she was invited to join the public health faculty as assistant professor of biostatistics and epidemiology.

Her interest in Native American health issues began in 1980. A faculty member died, leaving uncompleted two National Institutes of Health-funded studies into the causes of diabetes in Native Americans. Lee was asked to finish the projects.

She recalls how difficult that assignment was. Unable to locate the researcher's protocol, she struggled to make sense of the data and perform the statistical analyses.

She must have done a good



A chance encounter with two Native American diabetes studies led to a life's interest in Indian public health concerns for Elisa Lee, here with Cecilia Fire Thunder at a powwow in Rapid City, South Dakota.



job, however. Other NIH grants began to come her way. She has been principal investigator of NIH-funded projects totaling more than \$20 million, with most of the funds supporting projects dealing with the health of Native Americans. Major NIH support includes:

—an \$11 million grant for the 10-year Strong Heart Study, which examines cardiovascular disease and diabetes in Native Americans;

—a \$2.5 million grant for a five-year investigation of diabetes risk factors in Oklahoma Cherokees;

—a \$2.5 million grant to establish an educational program to prevent diabetic eye disease in Native Americans in Oklahoma.

Funding also has come from other sources, including a \$1.4 million grant from the Centers for Disease Control and Prevention to fund the Oklahoma Center for Prevention Research in Native Americans. In addition to her other administrative duties, Lee also served as director of this center from 1994 to 1998 and continues to serve as director of the Center for American Indian Health Research, the administrative home of her Indian health projects.

All this research has resulted in an impressive number of publications. The second edition of her book, *Statistical Methods for Survival Data Analysis*, was recently translated into Chinese. She has been involved with five book chapters, 90 juried papers and more than 70 abstracts and presentations. Nine soon-to-be-published papers came out of her data analysis of a multinational study of vascular disease in diabetes that was sponsored by the World Health Organization and funded by the NIH.

Lee and the College of Public Health have established an excellent working relationship with Oklahoma's Native American citizens. She and other faculty members meet often with the affiliated Seven Tribes in Anadarko, the Cherokee Nation and other tribal organizations, which support the college's efforts to understand and control the devastating

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diabetes epidemic among their people.

Lee's contributions to the University have not gone unnoticed. She is one of only a few faculty members to have been honored with Regents Awards for both superior teaching and superior research. In 1990, she was named a George Lynn Cross Research Professor. In 1992, she was named associate dean for research, and in 1994, she was named public health dean.

In spite of her administrative responsibilities, Lee is still writing proposals, still actively involved in research.

"Prevention is our ultimate goal," Lee says, "but prevention comes only with a clear understanding of how diabetes or heart disease manifests itself in a population and a clear understanding of the health history and habits of that population."

She explains that her epidemiological studies determine risk factors. Who is more likely to develop the disease? What are the likely complications?

"In those who have the disease, we want to know what can be done to prevent or delay the onset of complications," she adds.

A current project involves collecting data from Cherokees who are from five to 40 years of age. "We want to know at what age they begin to develop high insulin values and elevated glucose," Lee says. "At what age do they become at risk? How do these variables change with age and at what age is intervention needed?"

Obesity is a major problem con-

tributing to the onset of diabetes.

Lee tends to agree with the "thrifty gene theory" in explaining the high prevalence of diabetes among Native Americans. Over the eons, native people developed a metabolic system that protected them in times of famine.

"Now their lifestyle has changed drastically. They are more sedentary, and food is always plentiful. Indians have always eaten a high-energy, high-fat diet. At one time they needed the fat. Now they don't."

Not only is the College of Public Health involved in studying diabetes, it also takes an active role in education and prevention. One of Lee's favorite projects is an educational program that teaches those suffering from diabetes how to take care of their eyes and prevent or delay the onset of diabetic retinopathy.

"We go out to the Indian communities," Lee says. "We hire educators. We develop the teaching material, with participation from the medical school and Dean A. McGee Eye Institute.

"We are known," she says with pride. "When we go to places like Lawton or Tahlequah, people greet us with, 'Oh, you're the people from the OU Health Sciences Center.'"

Because of the Native American investigations and prevention programs, the college has greatly expanded the areas of epidemiology, health promotion, disease prevention and biostatistics.

"The entire college is doing very well," Lee points out. "OU public health graduates are in great demand.

"It has been a privilege to serve as



Elisa Lee was only nine when her family fled their Chinese homeland. In the past few years, she and husband Sam, pictured at the Great Wall, have returned several times to lecture at Chinese universities.

dean of this college," she adds. "I feel very fortunate that it is doing so well, that we have an excellent faculty who work well together. The college now has more than 40 faculty members, an increase of 10 in recent years.

"We have revised our curriculum, and because of our external funding, have been able to offer scholarships and assistantships. We are growing up."

A new chapter in Lee's life began in 1991 when she was invited to present a paper to the International Congress on Traditional Medicine being held in Beijing. Lee is known as an advocate of clinical trials to determine if herbal and other traditional medicine are truly effective.

The Lee family had visited Taiwan several times, but this was Elisa's first journey to mainland China. She recalls how "excited and curious" she felt when she emerged from the plane in Beijing. She realized that numerous unfamiliar new words had crept into the language, but very quickly felt at home. After all, academic and

scientific gatherings are special places, she points out. Political issues are not discussed. And even in 1991, change was in the air.

Since that time, Lee has made other invited trips to Beijing, lecturing and providing consultation at the Beijing Institute of Geriatrics. "They are very interested in my research, particularly in the area of diabetes," she says.

A collaborative relationship between the Beijing institute and the OU College of Public Health has evolved. With funding from the World Health Organization, the institute recently sent a post-doctoral fellow to Oklahoma City to pursue a master of public health degree in biostatistics and epidemiology.

Lee also serves as an advisor on research projects involving hypertension and cardiovascular disease at the Beijing Medical University School of Public Health. In 1995, the school conferred on her the rank of guest professor. And in 1997, the Institute of Geriatrics conferred an honorary

professorship on Lee at a formal ceremony in Beijing.

Sam has accompanied Elisa on visits to the mainland and lectured at several universities. Their daughter Vivian has traveled there with school friends. Elisa hopes that Jennifer will have the opportunity to visit mainland China someday.

Vivian and Jennifer grew up hearing their parents speak Chinese and eating their mother's Chinese cooking. Elisa says her daughters like Chinese food but "learned only as much Chinese as they wanted." English was definitely their first language. In college, however, they both studied Chinese and became quite interested in mastering their parents' native tongue.

Sam and Elisa recently experienced a first when they received a letter from Vivian written in perfect Chinese. "We were so happy!" Elisa says. "Writing Chinese is very hard, you know. We're going to put the letter in a frame."

A faculty member at the New York University medical school, Vivian was a Rhodes scholar and married a Rhodes scholar from New Zealand she met at Oxford. Younger sister Jennifer is a fourth-year medical student at Harvard.

Lee credits luck with bringing her to Oklahoma and the HSC. But her tremendous success must be attributed to other factors—ability, hard work, dedication and her genuine concern for Native Americans.

She worries about a "fatalistic streak" she has observed in many Native Americans. They believe that sooner or later they will contract diabetes and suffer from its various complications. With research and education, she wants to change that attitude.

"I am pleased that so many OU public health faculty are involved in research, particularly Indian health research," she says. "Because we are in Oklahoma, I believe we have a responsibility to our native people. This college is committed to Native American health."