He remembers Christmas Eve 2002. Woods and his wife had all the "It was a nice idea anyway," he said.

and family events to deliver babies. When Mark Woods chose a career in geophysics, he thought he would be immune from such interruptions. rock the desert of central New Mexico in 1945 during the secret proliferation monitoring technologies to track explosions.

proliferation monitoring technologies to track explosions. (the former Soviet Union, France, Britain, China, India, Pakistan and North Korea) are known to have successfully developed nuclear weapons. As many as 20 more countries are suspected of developing nuclear weapons. North Korea officials said they conducted an underground test as recently as a year ago.

AFTAC tracks these tests with a global network of nuclear event detection sensors called the U.S. Atomic Energy Detection System. Once the system senses a disturbance underground or underwater, AFTAC analyzes the readings to determine the source. "If things go bump in the night, we're called to review it," Woods said. Woods is part of a cadre of Saint Louis University graduates who work at AFTAC, which blends military and civilian personnel. More than a dozen SLU scientists work or have worked for the agency since it was activated in the 1950s, and another dozen or so SLU alumni are contractors who work with AFTAC on a regular basis. "Some days walking into work is like walking into Macelwane Hall," Woods said.

HAVING THE EDGE
Dr. Robert R. Hermann (Grad ’75), the Paul C. Rehnert Chair of Natural Sciences at SLU, said James B. Macelwane, S.J., is responsible for SLU's prominent presence at AFTAC. Macelwane established the first department of geophysics in the western hemisphere at SLU in 1925 and revitalized the Jesuit network of seismographs placed at 18 Jesuit universities and colleges across the United States.

When the U.S. Air Force became a separate military service in 1947, Hermann said one of the tasks Gen. Dwight D. Eisenhower assigned the branch was detecting "atomic explosions anywhere in the world." Air Force personnel needed advanced training to meet the challenge, and at the time there were only a handful of schools offering it in geophysics, among them the University of California at Berkeley, the California Institute of Technology, Columbia University, MIT and SLU. "We had an edge because of the hands-on training we could provide students," Hermann said. "We were the hub of a large seismic network, and Air Force personnel could work with live, high-quality data."

CLASSIFIED INFORMATION
Dr. Frank Pilote (Grad ’53) was a graduate student in meteorology and seismology when Air Force officers began enrolling at SLU Macelwane asked him to help with their training. "Being an Air Force officer, I wondered what the service had to do with reading seismographs," he asked Father Macelwane, Pilote said. "He told me it was classified, and I should just do what I was told. We found out later that the Air Force was using contractors at independent stations to read seismographs. They wanted to bring some of that work in house and open a scientific agency that could fully analyze data."

That agency was AFTAC and in 1962 the Air Force hired Pilote. He spent 37 years with the agency — 14 as director of research (first in geophysics and then in nuclear treaty monitoring) — before retiring in 1999. During his decades at AFTAC, Pilote kept the agency's worldwide monitoring stations viable and maintained or established relationships with other countries that had sensor stations and could exchange data. Before Pilote joined AFTAC, the United States had no coverage in the southern hemisphere. Working with the U.S. Geological Survey, Pilote established three stations in Africa and three in South America.

Pilote also was instrumental in designing the U.N. International Monitoring System, a key part of the Comprehensive Test Ban Treaty. The 1996 treaty is an international agreement designed to end the testing of nuclear explosives. (Many nuclear capable states, such as the United States, have signed but not ratified the treaty, yet they abide by its rules.)

Upon his retirement, Pilote was praised for laying the foundation for today's vigorous global nuclear treaty monitoring. "I enjoyed every minute of the job," Pilote said. "I traveled a lot and had to put out a lot of fires, but I made friends all over the world. I left with a deep sense of gratitude for having had the opportunity to play a role in such an important mission."

R. MARK WOODS (A&S ’76, GRAD ’86) GREW UP KNOWING what it was like to have last-minute absences from the dinner table. His father, Dr. Ralph Woods (A&S ’46, Med ’55), was an obstetrician who routinely was called away from meals and family events to deliver babies. When Mark Woods chose a career in geophysics, he thought he would be immune from such interruptions. "It was a nice idea anyway," he said.

He remembers Christmas Eve 2002. Woods and his wife had all the gifts wrapped and under the tree, including a rocking horse for their 2-year-old daughter. Woods couldn't wait to see her face in the morning, your job is helping to keep the world safe.