Student to study hospital-room desi

BY YOLANDA LUKASZEWSKI
Special to The Battalion

The only natural light in Adrian Scott De Leon's intensive-care unit came from a window 8 inches wide and 4 feet long. The window was behind him, but even if he could have looked out of it, the view was only of another building.

He spent 52 days in the room.

"The environment can dictate the healing process, how quickly [people] heal," David De Leon, Scott's brother, said.

David, a second-year architecture graduate student, is the recipient of the1999 American Institute of Architects and the American Hospital Association Graduate Fellowship in Health Facility Planning and Design. The STERIS Corporation also contributes to this fellowship.

The unfriendly design of Scott's room inspired David to make a difference as an architect. He will spend the next year visiting pediatric-cancer facilities around the country to study their architectural designs.

"The findings from this study will provide insight into the needs of medical staff, patients and families related to the hospital design," David said benefiting the design of future facilities. David is dedicating his project to Scott, who died of cancer in 1998 at 21.

In the past, David said, many children, who received cancer treatment stayed in sterile rooms with ceramic-block walls and fluorescent lights. Some facilities have already improved their designs, he said, partly because they realize patients can seek treatment at better-designed facilities.

"The biggest change is that now it's more of an 'at-home' feeling," he said. "It's not their home, but it can be comfortable like their home is."

Facilities have made several changes, David said. They have added rooms where children can play games with one another or use computers. Clouds sometimes are painted on walls and ceilings, and colors and shapes are used creatively. Countertops and chairs are at child height. Rooms have windows to al sunlight to enter. Medical e is pushed behind a panel and hoses do not scare the cilities also accommodate pa lowing them to sleep in room as their children.

"Research has shown th ing this the child respond medication better," David s child is less scared and de and the parents are more a well, he said.

In November 2000, David sent his findings at the Amer stitute of Architects/Academ chitecture for Health Confe Vancouver, Canada, to an a of health-care industry archi

"I think an architect things for his own or her isfaction," David said. body likes to go by and that building — I design building.' I would like to would be nicer to say, 'N did I design a building, hopefully helping hundr people feel better.'"

Researcher explores ways to date paintin

BY SCOTT JENKINS
Special to The Battalion

Rock paintings provide a glimpse into the psyches and souls of ancient humans. They are an enduring part of the prehistoric culture and can yield a wealth of insight for the archeologists who study them.

One important question about rock art that archeologists want to answer is when was it painted — a deceivingly simple question, but one that has been impossible to answer reliably in the past. Texas A&M University chemistry professor Marvin Rowe is out to change that.

By applying specialized techniques and instrumentation to a previously known dating method, Rowe has been able to find a direct and absolute way of dating samples of rock paintings called radiocarbon dating. It utilizes a rare but naturally occurring form of carbon whose nucleus undergoes radioactive decay called carbon-14, which created in the upper atmosphere, oxidized into carbon dioxide, and incorporated by plants as they respire.

As the plants are consumed, the carbon-14 is distributed to other organisms. As a result every living creature contains some radioactive carbon, roughly the same amount in each organism.

In determining the age of ancient bone, for example, scientists compare the amount of carbon-14 in a living bone. By knowing the rate at which carbon-14 decreases (by radioactive decay) at a known rate after the organism dies, a reliable estimate for the age of the ancient bone can be obtained. The older the bone, the more carbon-14 will have decayed which can be used to mine its age.

If there is an organic material in the paint, it is ble to use the known decay rate of carbon-14 to e the age of the paint. But obstacles must be overc use this dating method with rock paintings.

The carbon from this once-living material in th can be used for dating. This carbon cannot be u dating, so, the first hurdle is separating the orga terial in the paint from the carbon in the rock.

Rowe and his colleagues use a highly reactive ergetic state of oxygen gas to react with the carbo the paint to in carbon dioxide. This type of oxyge low-temperature plasma, will oxidize the carbo ganic origin, while leaving the carbon from th alone. The carbon dioxide formed after oxygen treatment is collected and used for the dating.

The second problem Rowe's research faced w sizes of the samples his group works with – le milligrams — too small for conventional carbon- ing, which relies on counting the number of deca occur in a given time would require weeks for a because the rate of decay is relatively slow.

The solution to this problem comes from an e ment called an accelerator mass spectrometer (This instrument allows researchers to count the nu of carbon-14 atoms in a sample directly instead of ing around to count decays. By directly detecting th bon-14 particles, thousands of carbon-14 ions can be tected in a only a few minutes using the AMS.