

Tyger! Tyger! burning bright  
In the forests of the night;  
What immortal hand or eye  
Could frame thy fearful symmetry?

William Blake, 1757 – 1827



Dr. Tom Curro, right, with Omaha's Henry Doorly Zoo, checks the status of an anesthetized Liku, as Creighton University Medical Center's Ann Brizendine and Harry LaHS ready the scan. The tiger was immobilized at the zoo with injectable drugs that were loaded in darts; his surgical sleep state was maintained with gas anesthesia.

# Cat Scan

By Pamela A. Vaughn  
Photography by Don Doll, S.J.

He was only two years old, but the arms that lifted him from the gurney to the scanning equipment felt all of his sleeping, 237-pound weight.



It was a cold and snowy mid-November day at Creighton, but no one was paying much attention to the weather with this special patient waiting just outside Radiology.

Liku, a healthy Malayan tiger born in Omaha's Henry Doorly Zoo, had been brought to the Creighton University Medical Center for study only — and, at that, a quick study.

But the images of Liku that would result from this brief — and quite literal — CAT-scan will offer a lifetime of learning possibilities for scientists bent on understanding anything from the structure of the middle and inner ear to lung and brain anatomy.

For though our two species diverged long ago on life's family tree, our DNA builds some pretty similar structures — and that's what Creighton experts and

those around the world will understand better, thanks to Liku and his images.

But that's not all.

Liku's images will be a key part of photojournalist Carol Amore's 5,000 square foot traveling exhibit on tigers that will visit zoos worldwide, starting in January 2007. In the interactive exhibit, Liku's CAT-scans will be used to take visitors on virtual journeys of discovery "inside" this beautiful, rare animal.

In fact, Amore was drawn to the big-cat auditory research of Creighton alumnus Edward Walsh, PhD'83, a scientist at Boys Town National Research Hospital (BTNRH) in Omaha, as well as the work of the Omaha Tiger Project team. Walsh and his wife and Boys Town colleague, JoAnn McGee, Ph.D., MS'82, have been studying the hearing of large cats in cooperation with Omaha's Henry Doorly

Zoo for the past five years.

The Omaha Tiger Project includes veterinarians from the zoo, scientists from BTNRH, and physicians from Creighton University Medical Center and Creighton University School of Medicine.

Amore plans to feature images of Liku's hearing apparatus in a "giant ear display," as a special part of her exhibit, "TIGERS: Tracking a Legend."

Why an exhibit on tigers?

Not only are these beautiful animals interesting to the purely scientific, but their toe-hold on the planet is very perilous, Amore explains.

Three of the eight tiger subspecies are extinct, she adds, the Javan, the Caspian and the Bali. The South China tiger is now regarded as extinct in the wild, with the Siberian, Bengal, Sumatran, Indochinese and Malayan tigers

further endangered if poaching and the destruction of habitat and prey continue. Some 6,000 wild tigers remain in the world, and about 2,000 to 3,000 of them are thought to live in India, the focus of Amore's work.

Liku is a member of the Malayan sub-species.

Boys Town's Walsh explains the conservation side of research: "The images will help us understand the hardware that the tiger uses to communicate, and use that knowledge to help the plight of these magnificent animals."

In this photo essay, Creighton's internationally acclaimed photographer Don Doll, S.J., shows us Liku's experience at Creighton, together with those of the Creighton, Boys Town and Omaha's Henry Doorly Zoo research team who made Liku's journey possible.



▲ Dave Hanson, supervisor of cats for the zoo, unrolls the stretcher that will carry Liku, while photojournalist Carol Amore (background, left) captures the scene. Fully anesthetized, the tiger is unaware of all the preparations going on in his behalf. In fact, Martin Goldman, M.D., chairman of radiology at Creighton, says there were more than 23 individuals from Creighton University Medical Center and the School of Medicine who joined the zoo team to ensure Liku's safety in his visit to Creighton. These included specialists from radiology to housekeeping, infectious diseases to security and anesthesiology.



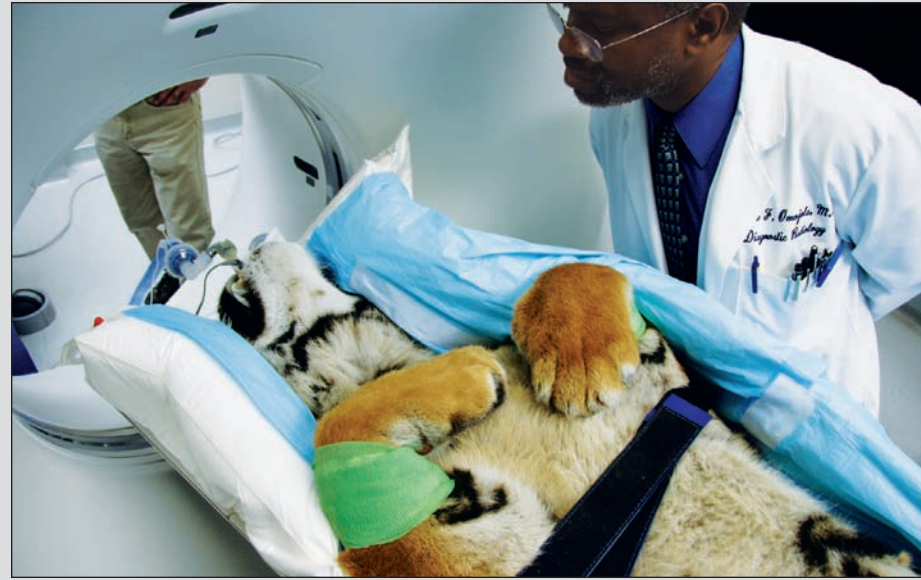
▲ Sarah Dankof, upper right, supervisor of the hospital at the zoo, adjusts Liku's intravenous fluid rate, while Dr. Curro, lower right, administers the tiger's first dose of contrast media, a luminous material to be followed on Liku's scan. Others attending to the tiger are Hanson, lower left, and Christoffer, upper left.



It takes a team: The zoo's Dave Hanson, ▶ back, center (in baseball cap), works with physicians and technologists with Creighton University Medical Center and Boys Town to position Liku for the scan. Others include, upper left, Matthew Omojola, M.D., and Julian Lachandro, left; and right, back to front, Marilyn Buchholz, Harry Lahs, Ann Brizendine and Mark Maydew, M.D.

◀ The zoo's cat keepers carry a sleeping Liku to his awaiting transport. They are, clockwise from front, left: Jen Wilson, Kim Kelly, Alexis Christoffer and Dave Hanson, front, right. Because one dart is good for about 20-30 minutes of immobilization, the zoo team is also using gas anesthesia. Thus, they can hold Liku in this manageable state, via endotracheal tube, for as long as they need.





▲ Creighton radiologist Matthew F. Omojola, M.D., checks Liku's positioning for the scan of his head and neck, including his middle and inner ear. Solitary hunters, tigers must communicate over vast distances within their range to avoid intruding in another's territory. Their ability to hear the unique, low-frequency vocalizations of other tigers keeps these animals at a safe distance from one another as they hunt. It also may help them find mates. A possible conservation strategy could mimic these sounds — and keep the tigers on safe turf.

◀ Liku is positioned in CT scanner at Creighton, fully unconscious.

▼ Radiology technologist Ann Brizendine confirms Liku's positioning for the scan of his chest and abdomen.



▲ Liku's scan is in full progress, as photographers, including conservationist Carol Amore, center, capture the event. Meanwhile, the image of human vs. tiger appears incongruously on the screen.



Photographer Amore, in Omaha for the scan, and pictured in the inset with two other tigers, will exhibit Liku's images around the world for conservation and study. "'Cool' is not a word in my vocabulary," said Creighton's Dr. Martin Goldman when asked about their four-legged patient. "But this was the coolest thing I've ever seen, an unbelievably gorgeous animal."

