



## Bellwether Magazine

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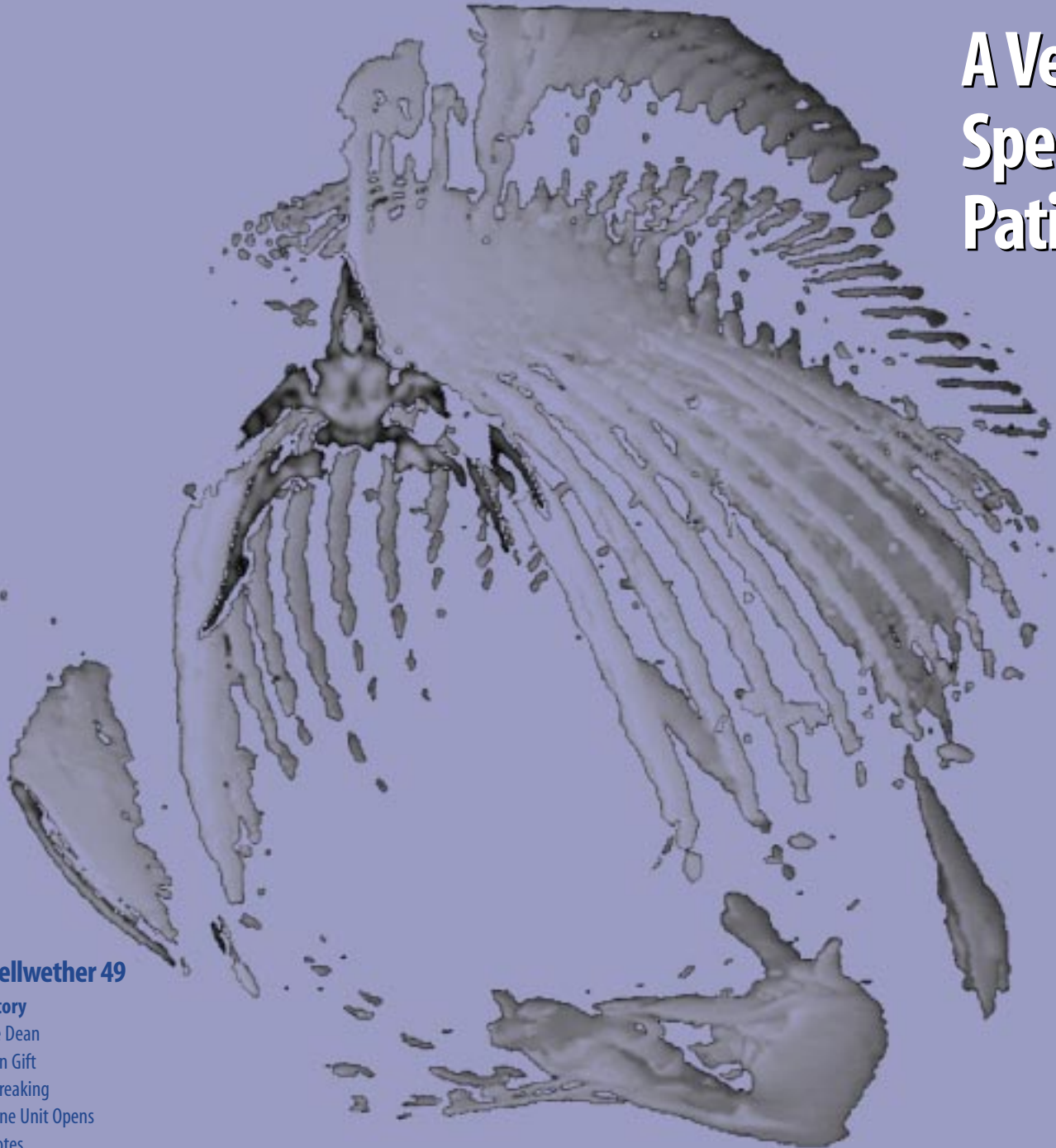
# A Very Special Patient

# Bellwether

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## A Very Special Patient



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School of Veterinary Medicine  
UNIVERSITY OF PENNSYLVANIA

# A Very Special Patient

In December a very pretty and unusual patient came to VHUP. She weighed around 15 pounds, had a beautiful, silvery complexion and four perfect, round, red dots on each side in addition to a pretty red cap covering the head. Four Step Rose created quite a sensation in the School's radiology department. Rose is a fish, a prize koi.

Rose was brought to Penn by her owner because she had a bump on one side of her body. It was feared that she might have a tumor on her ovary. **Dr. Scott Weber, V'97**, who is with the New Jersey State Aquarium, suggested that Rose be examined at VHUP. If she had a tumor, surgery could be performed there.

Dr. Weber and **Dr. Karen Rosenthal**, director of VHUP's special species clinic set to work to make the arrangements for Rose. Performing a diagnostic work-up on a fish is more complicated than working on a dog or a cat, or even an iguana. Fish live in water. VHUP's regular patients live on land.

**Dr. Greg Lewbart, V'88**, assistant professor at North Carolina

State Veterinary College, flew in to lend a hand, particularly if surgery was needed. Dr. Lewbart specializes in aquatic veterinary medicine and has performed a number of surgeries on fish. The Penn team included **Dr. Mark Saunders**, associate professor of radiology, **Dr. Alan Klide**, professor of anesthesia, and **Dr. Chick Weisse**, resident in surgery, who has a keen interest in surgery on fish. Dr. Rosenthal was present and technicians and students helped, too.

Rose arrived early in the morning. Another koi, with no health problems, was brought along as the "normal" animal. Both traveled in huge bags of water and more water was brought along. It was needed for the anesthesia container as these fish need to be kept in

"their" water to reduce stress.

First Rose was radiographed. She was anesthetized by Dr. Klide who added the carefully calculated anesthetic to water in a large cooler. The fish was immersed and as soon as the drug took effect, the animal was transferred to the x-ray table. Various films were taken and Rose was returned to her regular water to wake up. Quickly



**Top left: Checking the vital signs on the x-ray table. Top right: Dr. Lewbart taking blood samples. Right and below: Positioning Rose for the scan. Left: Scanning.**



she began to move around. The x-rays showed that her two swim bladders were of equal size, which is not normal, and that she had slightly abnormal curve of the spine. There was no evidence of a tumor. The normal fish then underwent the same procedure—his swim bladders were of different sizes, as one would expect.

To take another look at Rose's swim bladders, an ultrasound was performed. Dr.

Saunders inserted the ultrasound probe into the water and tried to get a reading while Rose tried to wiggle away.

The last test was a CT-scan. Rose was again anesthetized and placed on the CT table. While she was there, Dr. Lewbart took a number of blood samples for a battery of tests. She was scanned twice, once on her side and once sternally. No tumors were evident. Everyone was much relieved. To get a better look at her bone structure, Dr. Saunders generated 3-D images of her skeleton. The computer program for VHUP's helical scanner reconstructs the skeleton from the scanned sections. The image can be rotated and looked at from any angle. This provides an additional diagnostic tool.

After the series of scans a lengthy discussion occurred. The clinicians concluded that surgery was not needed and that Rose should go home and be watched. The reasons

for the enlarged swim bladder and the curve to her spine were not known; they suspected that she might have been injured as a very young animal. The owner was relieved and took Rose and the other fish home. Rose needs to grow up, she won't be mature for

another 18 months. Once she has been bred, everyone will wait to see whether she produces offspring with her lovely color and her even red dots—steps as they are called by koi fanciers.

Since Rose's first visit to VHUP, Drs. Weber, Klide and Weisse have performed a number of surgeries on fish at the New Jersey State Aquarium. Their patients have done well and are back in the exhibition tanks.

Rose returned to VHUP for a check-up in March. This time her visit was recorded by a film crew. Rose's story will be aired some time in May or June by Animal Planet, a cable channel.

**cover picture: 3-D image of a part of Rose's skeleton.**