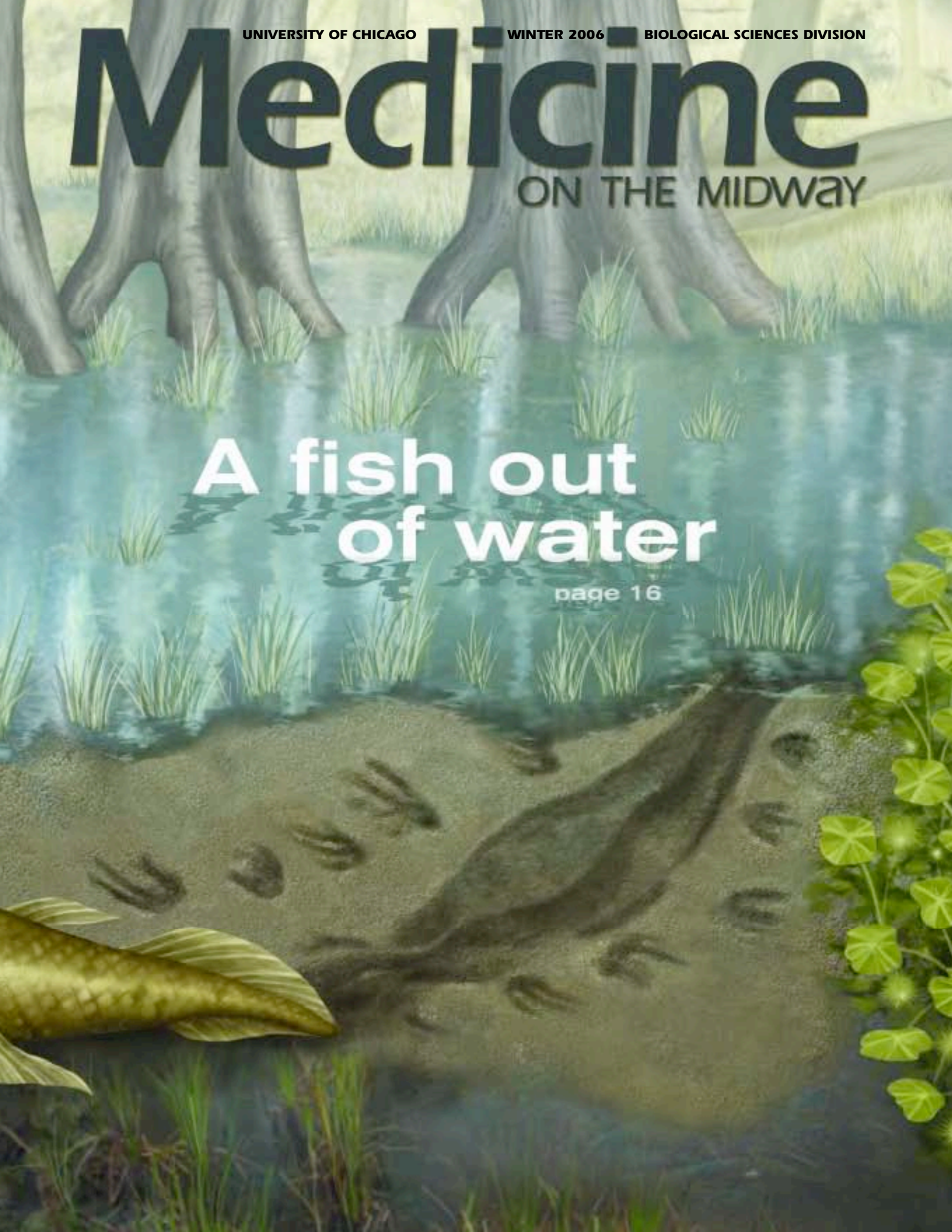


# Medicine

ON THE MIDWAY

## A fish out of water

page 16



## Searching for statins

Pulmonologist Jeff Jacobson's work is filled with unanswered questions.

"And that's what makes it fun," he said.

In the lab of Department of Medicine Chairman Joe "Skip" Garcia, MD, at the University of Chicago, Jacobson, MD, studies acute lung injury. That's an umbrella term for respiratory problems, marked by inflamed lungs, that kill about 75,000 Americans a year.

At any given time, a quarter of patients in the intensive care unit might have acute lung injury, though, "the root cause may be highly variable," Jacobson said. "Unlike heart attack or stroke, the magnitude of this problem remains largely unappreciated."

Often, when people die of pneumonia or influenza, acute lung injury is actually responsible, he said. Pneumonia or flu can cause inflammation, which prompts endothelial cells that line blood vessels in the lungs to pull apart, leaving gaps that allow fluid to escape. Jacobson's research focuses specifically on a group of drugs called statins and their effects on those gaps.

Statins are the most commonly prescribed drugs in the world. Already in use to lower cholesterol, their effects stretch far beyond that primary purpose. They also cause endothelial cells to tighten.

His research became especially critical when the government began preparing for a potential bird flu outbreak. "Our work is certainly relevant to bird flu, but we didn't fully appreciate that until a number of people approached us about it."

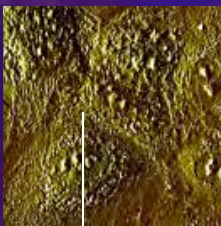
Jacobson has already published findings from his tests of the drugs on mice. He also is looking at preliminary studies that track patients who enter the ICU with pneumonia. Those who are not on statins for their cholesterol, he said, tend to do much worse than those who are.

Currently, the only care available for people with acute lung injury is purely supportive. Caregivers can put the approximately 190,000 cases they see each year on ventilators. While that measure is a temporary aid, it won't cure the ailment. Statins could change all that.

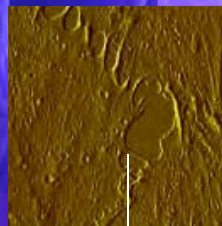
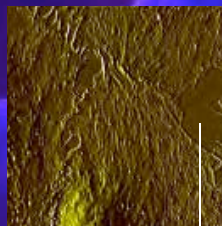
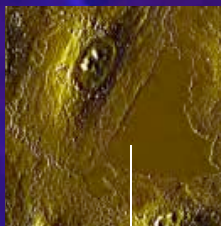
In ICUs across the country, researchers are gearing up for clinical trials. "This is interesting and with so much potential because these drugs are already available," Jacobson said.

And with each new case, Jacobson finds more answers.

—Katie Scarlett Brandt



Healthy cells



Cells separate, creating vascular leaks



*On these pages:* Pneumonia or flu can cause inflammation, which prompts the endothelial cells that line blood vessels in the lungs to pull apart, creating vascular leaks (see inset photos on opposite page). Blood cells and fluid escape from the small vessels causing edema in the surrounding tissues, especially the lungs. University of Chicago researchers study the basic biology of this process, which has led to new ways to prevent vascular leak, reduce swelling, inhibit tissue damage and restore the integrity of vessel walls. *Inset photos courtesy of Jeff Jacobson/background photos by Matthew Jacques, Shutterstock*

*On the cover:* Tiktaalik roseae stepping onto land. *Watercolor by Nora Morales*