

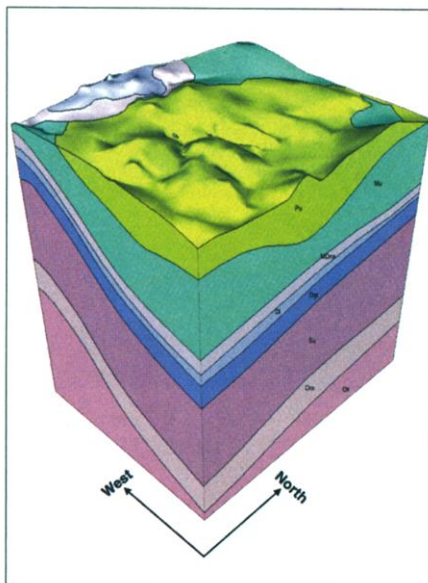
RANDOM SAMPLES

edited by JOSH GEWOLB

Getting to the Bottom of the Midwest

Many travelers find the midwestern United States flat and boring. But the dull landscape actually covers a turbulent past, a new set of 3D maps reveals. In what Stephen Marshak, a geologist at the University of Illinois, Urbana-Champaign, calls "a very new tilt on geological mapping," four Midwest states are collaborating with the U.S. Geological Survey to produce maps that combine surface topography with seismic studies and drilling to reveal the shape of things more than 150 meters underground.

The first maps made by the 4-year-old Central Great Lakes



Geological riches are hidden below the bland surface of the Great Plains.

Mapping Coalition detail the geology of select Chicago

suburbs, the Fort Wayne, Indiana, region, and southwest Michigan. Mappers are finding "far more variability than had been thought and considerable insight into glacial processes and deposition," says geologist Richard Berg of the Illinois State Geological Survey in Champaign. Repeated advances and retreats of glaciers in the Midwest have, over time, "piled one landscape over another and created a very complex array of buried deposits." This is very different from the geo-

IOM Picks New Members

The Institute of Medicine (IOM) has elected a crop of 60 new members, expanding its ranks to a total of 632. The new members include Johns Hopkins cancer biologist Bert Vogelstein and Harvard stem cell expert Doug Melton; a full list is posted at www.iom.edu. The IOM also elected five new foreign associates and five new senior members.

logic story of the Western states, where glaciation was sparser and the rocky geology is commonly in plain view.

Virtual therapy has now come to the treatment of eating disorders. Researchers at the Istituto Auxologico Italiano in Verbania, Italy, have devised a new virtual reality treatment designed to get patients to confront compulsive overeating, anorexia, and bulimia.

Teletherapy for Eating Disorders

Bulimic patients, for example, don a head-mounted display for 10 sessions in which, with the aid of a joystick, they explore up to six different virtual environments, or "zones." In some, such as a kitchen or a supermarket, patients can choose what to eat. After "eating" each dish by virtually touching it, patients check their weight on a virtual

scale, which shows their weight gain. In other zones, patients compare their bodies with those of models and are instructed to pick their ideal. They also watch themselves in a virtual mirror that details their movements. Istituto Auxologico psychiatrist Giuseppe Riva says



Visits to a virtual supermarket may help eating disorder patients.

that the exercises make patients aware of the consequences of their eating habits and remedy damaging body-image perceptions.

Virtual environments are an "interesting and challenging" aid to treating eating problems, says psychologist Ilse Kryspin-Exner of the University of Vienna in Austria. But she cautions that they are only a supplement to traditional nutritional and psychological therapy.

Six Degrees of Uncertainty

In the aftermath of the World Trade Center attack, it seemed that if you didn't know anyone who had seen the towers fall, you knew someone who knew someone who did.

Proof for the popular notion that there are "six degrees of separation" between every individual in the country? Not necessarily. A new study argues that the famous 1967 research paper that gave rise to that phrase is seriously flawed. In now-classic experiments, Yale psychologist Stanley Milgram gave people in Kansas a letter and asked them

to attempt to forward it to a target person in Massachusetts. If they didn't know the target person, they were to send it to someone they thought might know him. Surprisingly, he reported that it only took five jumps, on average, for the letters to reach their destination.

But Milgram didn't tell the whole story, says Judith Kleinfeld, a psychologist at the University of Alaska, Fairbanks. In the archives, she discovered that the successful trips may have been brief, but only 30% of letters reached their destination. What's more, in a pilot study using less official-looking letters, just 5% made it. By not counting the uncompleted chains, Milgram skewed the results, Kleinfeld writes in a forthcoming paper in the journal *Society*. "I came out profoundly upset," Kleinfeld says. "One of my heroes had fallen."

Cornell mathematician Steven Strogatz says that Kleinfeld's findings raise valid concerns. But he says mathematical models show that such ties exist—even if people are not aware of them.

Nobel Pursuit

"Nobel Prizes are different from Olympic gold medals. It's very subjective to decide which fields are more important than others."

—Ryoji Noyori of Japan, 2001 Nobel laureate in chemistry, speaking last week about why the government's goal of capturing 30 Nobel Prizes in the next half-century is not reasonable.