Drive eight hours in any direction in Southern California and you’ll get a lesson in geology by way of landscape. Desert erosion, glaciation, volcanism, prehistoric landslides and active earthquake faults abound along the region’s highways and byways.

But you have to know what you’re looking for. A new book by UC Santa Barbara geologist Arthur Sylvester and illustrator Elizabeth O’Black Gans, an alumna, aims to help.


With 196 geo-referenced color photographs, 84 detailed maps and 31 explanatory diagrams, the 400 pages of “Roadside Geology of Southern California” combine the latest science with accessible stories about the rocks and landscapes visible from winding two-lane byways as well as from the region’s vast network of highways.

“The hard part — besides driving 13,000 miles — was deciding what had to be omitted from our book,” said Sylvester, a professor emeritus in the Department of Earth Science. “Southern California is chock full of geological treasures.”

The text reviews the complex geology and geologic history of the region’s notable features such as the San Andreas Fault, the Salton Sea, the boulder piles in Joshua Tree National Park, the brilliant white dunes of the Northern Channel Islands and the
youthful volcanic cinder cones in the Mojave Desert. It also explains why the
Transverse Ranges — which include the Santa Ynez Mountains behind Santa Barbara
and the San Gabriel and San Bernardino Mountains that border the Los Angeles
Basin — trend east to west rather than northwest like the majority of mountains in
California and North America.

“Our book details how these ranges rotated over time as part of the
shearing movement between the North American and the Pacific plates,” Sylvester
explained. “The Transverse Ranges started out as coastline near San Diego and over
millions of years spun clockwise almost like a log in an eddy.”

Southern California also features almost every age of rock, from 2.5-billion-year-old
metamorphic rocks to 3,000-year-old volcanic cinders. Sylvester also noted that the
range of rock types is mind-boggling. The region includes high-grade metamorphic,
plutonic and volcanic rocks, common sandstone and limestone, soupy sediments yet
to harden into rock, precious gemstones and giant quarries of sand and gravel.

Sylvester has two favorite geologic roads: State Route 2 across the San Gabriel
Mountains and State Route 33 over the Santa Ynez Mountains. “These are really
interesting byways over the crests of two major mountain ranges,” he said. “They
offer a driving experience along curvy but well-maintained two-lane roads. You can
see spectacular geology as well as a lot of scenery unlike the sound walls and
monotonous landscaping along most Southern California freeways.”

While Sylvester considers those state routes the most fun to drive, he says Highway
101 along the coast between Ventura and Santa Barbara is one of the most scenic
drives in Southern California. “The book directs your attention from the sea and the
Channel Islands to must-see geologic features in the cliffs that might not be
apparent at 65 mph,” he said.

Sylvester noted two places offering more leisurely drives near the Salton Sea that
cover a lot of geologic features in one day. “I love the drive up Split Mountain Gorge,
south of California 78 in the southwest corner of the Salton Trough,” he said. “Its
towering cliffs bear clear evidence of a huge landslide that crashed into soft
sediments and folded them into fantastic contortions.”

On the north edge of the Salton Sea, the Mecca Hills area has colorful sedimentary
rocks folded and faulted within the San Andreas Fault zone. “In contrast to freeways,
you can park anywhere along these winding roads to admire and study the
geology,” Sylvester said. “And in both places, the exposures are almost 100 percent, so the spectacular geology is easily seen.”

Sylvester will sign copies of “Roadside Geology of Southern California” at Chaucer’s Bookstore at 3321 State St. in Santa Barbara on Tuesday, March 8, at 7 p.m.

---

**About UC Santa Barbara**

The University of California, Santa Barbara is a leading research institution that also provides a comprehensive liberal arts learning experience. Our academic community of faculty, students, and staff is characterized by a culture of interdisciplinary collaboration that is responsive to the needs of our multicultural and global society. All of this takes place within a living and learning environment like no other, as we draw inspiration from the beauty and resources of our extraordinary location at the edge of the Pacific Ocean.