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Geologist says Santa Cruz would be hit hard in quake

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SANTA CRUZ — After hearing Gerald Weber speak about the havoc the next major earthquake will wreak here, local residents may be tempted to pack up and move to Kansas.

Weber's speech Wednesday night at Harbor High School began the second evening of Earth Stress lectures sponsored by the UCSC Division of Natural Sciences and the Santa Cruz City Museum Association.

In his talk on active faults and earthquake hazards, the geologist said surface rupture, seismic shaking, and landslides all probably will be felt in different parts of the county if a major earthquake hits here.

Weber said the San Andreas, the Zayante and the San Gregorio are all active faults that concern geologists because they have caused ground rupture in the area in the last 11,000 years.

The San Andreas Fault, responsible for the 1906 earthquake that shattered San Francisco, stretches the length of the state and is the most notorious fault in North America. It slices through the Santa Cruz Mountains as a mile-wide strip made up of many smaller faults.

Weber was not enthusiastic about the building along the San Andreas fault. "If it was up to me, all the land

in the Santa Cruz mountains would be open space or golf courses." But he said that homes may be built in the Santa Cruz Mountains if the area is surveyed by geologists, and if builders set homes at least 50 feet from the fault.

The stretch of fault that runs from the Santa Cruz Mountains to Mendocino has been quiet in recent years. Ironically, that's what worries Weber. He said this may indicate the earth on either side of the fault is locked together and that tension is building along the fault. "When it unlocks, we will have a big quake," he said.

Weber said that the other two active faults in the Santa Cruz area are unlikely to cause quakes of the same magnitude as the San Andreas because they are shorter. "There is a direct relationship between the earthquake size and the length of the fault," he said.

The Zayante Fault runs parallel to the San Andreas through the center of the county, and the San Gregorio Fault runs along the coast.

Weber said that when the next quake hits the area, several different effects will be felt.

Buildings atop the fault are likely to be torn apart as the ground on one side lurches forward. But, illustrating his point with photos of structures that survived the 1906 quake, Weber explained that wooden struc-

tures withstand this type of stress amazingly well.

Weber said that shaking, which geologists call seismic tremors, is responsible for most of quake death and destruction. He showed a map of the county that highlighted the places where severe shakes are most likely. According to Weber's map, an earthquake will hit downtown Santa Cruz hard, because of the soft sediments on which the city is built.

Weber gave the audience some tips on how to build in earthquake country. "The absolute worst thing you can do is build a house with a tile roof, because it will fall down on your head," Weber said. He also warned that buildings made from unreinforced brick are extremely vulnerable to earthquakes. Weber said there are many such buildings in downtown Santa Cruz, and several can be found along the Pacific Garden Mall. "These buildings will fare badly in the next quake," Weber said.

He also warned about landslides, another major earthquake risk. He showed the crowd a map of the Santa Cruz area littered with evidence of previous slides. The remnants of one slide in the Aptos Creek area measure one mile across. But Weber said that it is virtually impossible to predict where slides will occur when the next big one comes.