

# High-tech toxicology center opens at Long lab

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SANTA CRUZ — A new center for studying organic-chemical pollutants in marine and fresh waters was dedicated Friday at UCSC's Long Marine Laboratory.

The star attraction of the \$750,000 center is an advanced instrument for identifying and measuring minute traces of pollutants in water, sediment, or in tissue of fish, birds or marine mammals.

"This is the kind of facility that is very much in the tradition of UCSC," recently appointed Chancellor Robert Stevens told a crowd of about 100 at the dedication.

"We intend to build on our strengths in biology, especially marine biology, and our concern for the environment," Stevens said. "They come together here very neatly."

The new trace organics center will be among the things on view at the laboratory's annual open house from 10 a.m. to 4 p.m. today, with a barbecued albacore picnic lunch from 11 a.m. to 3 p.m. Access to the instruments is restricted, but the facility can be seen through windows.

The audience, seated in sunshine and a light breeze at the seaside laboratory, included state Sen. Henry Mello, D-Watsonville, and Assemblyman Sam Farr, D-Monterey, who supported state funding for the facility. Also there were state Department of Fish and Game officials and UCSC faculty and students who will use the new instruments.

Joseph M. Long, who donated money for the main analytical instrument, also attended. Donations from Long, co-founder of Longs Drugs, helped establish the marine lab in 1978.

William Doyle, director of UCSC's Institute of Marine Sciences, told the audience that the new center is a response to one of today's key problems, the introduction into the environment of organic pollutants, which include pesticides and petroleum products.

Farr praised the center.

"We need the kind of new technologies represented by the Trace Organics Facility in order to wage an effective battle" against environmental pollution.

"As we sit and stand at the edge of the continent, within a stone's throw of one of the most mysterious and beautiful bays of the Pacific rim, we must realize that this bay is under siege," Farr said.

He criticized federal efforts to develop offshore oil tracts, and to "strangle" effective state and local protection of coastal resources.

Mello expressed concern about the health of Monterey Bay fisheries and resources.

"I hate to think that our generation is the one that led us more toward destroying these wonderful natural resources than any other in our history."

The final speaker on the program was Peter Witschi, associate director of the University of California's systemwide program on toxic substances, based at UC Davis.

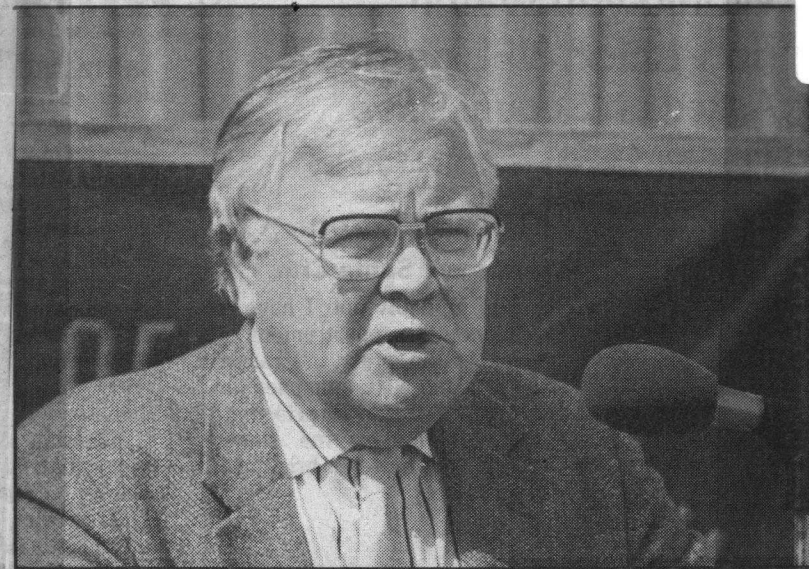
Witschi is an internationally recognized toxics expert who assumed his position only six weeks ago.

"I have to confess something," Witschi told the audience. "I grew up in a landlocked country, Switzer-



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Lab coordinator Brock de Lappe and researchers Rob Franks and Russ Flegel examine state-of-the-art equipment.



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New UCSC Chancellor Robert Stevens welcomes center.

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land, and I do not know much about marine toxicology," he said. "But I know enough about high-tech instrumentation, the resources and the people behind them, that I really can predict that this place is going to be a center of excellence."

After the ceremony, the audience adjourned for a buffet luncheon and tours of the new facility.

Asked his reaction to the facility, Joseph Long said, "I'm glad I contributed to it. You have a wonderful campus here. It deserves everybody's support."

Brock de Lappe, a marine chemist involved in developing the center, spoke enthusiastically about the new instruments.

"We expect to entertain researchers from all over the world," de Lappe said. "This is really the latest and greatest."

The main instrument, a high-resolution mass spectrometer, is a fully computer-controlled device.

The mass spectrometer starts with an extract from a water sample or the fat of an organism. The material is slowly heated and passed through a 100-foot long column, with lighter molecules making it through the column first and heavier molecules moving more slowly, taking longer to pass through the column.

"What you've done is started a race at the time of injection," de Lappe said. "All the molecules, the

whole complex mixture, is there all at once, and now you've obtained this

separation" of the molecules according to their weight or mass.

Upon leaving the column, the molecules are broken into fragments that are given an electrical charge, or ionized, so they will respond to magnetic fields. The charged molecules, or ions, are accelerated and further separated according to mass and charge.

Finally, detectors identify the mass and properties of the frag-

ments, providing clues to the original chemical makeup of the sample.

De Lappe said there are only three other high-resolution mass spectrometers in the U.S. with the advanced computerization of the one in the trace organics facility.

"It's really a boon to get this money from Joe Long," de Lappe said. "Go shop, you're a chemist, go buy the best instrument you can buy. Here's a check. It's like manna from heaven, it's really unbelievable!"