

Critical Earthquake Monitoring Network Continues Operation with Private Funding

Financial donation by Seismic Warning Systems supports public-private collaboration for earthquake hazards in area of high seismic risk

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A key Southern California earthquake monitoring network operated by Scripps Institution of Oceanography at the University of California, San Diego will continue to operate with funding support from [Seismic Warning Systems Inc.](#), a private company that provides seismic detection and earthquake warning systems and services.

A gift of \$700,000 by Seismic Warning Systems will sponsor support and ongoing operations of the [ANZA Seismic Network](#), which features 28 earthquake monitoring stations in San Diego and Riverside counties. The ANZA network, a state-of-the-art system in operation since 1982, provides the best coverage of the San Jacinto fault zone, considered the most active fault in Southern California. Seismologists have identified the San Jacinto, San Andreas, and Elsinore faults as having increased probability of rupturing with earthquakes of magnitude 6.7 or higher in the next 30 years. The ANZA Network's seismic sensors provide critical earthquake risk information for San Diego County's three million residents. A year ago, [funding cuts](#) facing the ANZA network put its operation in jeopardy.

"The ANZA network provides critical data to help detect and transmit earthquake hazard information to protect lives and infrastructure," said Margaret Leinen, vice chancellor of marine sciences at UC San Diego, and director of Scripps Oceanography. "Seismic Warning Systems has stepped up to provide the kind of critical private funding that makes a difference to our science and our society."

“We are extremely pleased to support the important work of UC San Diego and Scripps Oceanography,” said George Dickson, founder and CEO of Seismic Warning Systems. “This is a great example of how a collaboration between the private sector and a leading university can advance the science and practical application of regional earthquake warning solutions in the pursuit of saving lives and critical infrastructure.”

Based in Scotts Valley, Calif., Seismic Warning Systems develops and deploys earthquake warning systems and services. The new collaboration will enhance regional earthquake warning deployments and promote education and training for the public to develop an understanding of what will happen in the event of an earthquake, and how to be as prepared as possible.

When Supervisor Greg Cox was informed about the proposed cuts to the ANZA network, he was concerned it would have left only a few USGS real-time stations adjacent to San Jacinto fault, decreasing earthquake warning lead time and significantly reducing seismic monitoring capabilities in the region.

“California is earthquake country and this funding will keep this critical seismic network operating,” said Cox.

“The ANZA Seismic Network is a unique platform for real-time earthquake monitoring and research in Southern California,” said Scripps research geophysicist Frank Vernon, the lead researcher of the network. “The San Jacinto fault zone, with its branches and extensions into the Imperial Valley, remains one of the most active fault zones in the continental U.S., and the Anza seismic gap remains one of the most probable sites for a moderate to major earthquake in the next few years. The ANZA network provides excellent coverage for earthquakes in the San Jacinto fault zone.”

The ANZA network features 21 real-time seismic stations along the San Jacinto fault zone, spanning 120 kilometers (74 miles) from Hemet to the southern end of the fault. Six of these stations are within 600 meters (1,900 feet) of the surface trace of the fault, providing the opportunity for unique, near-fault observations. From a research perspective, Vernon says, the ANZA network is accumulating detailed data on internal fault zone processes necessary to answer critical questions about time variability of seismicity, source mechanisms, and wave velocities.

“We are extremely pleased to team with the scientists at Scripps Institution of Oceanography,” said Mike Price, chief technology officer at Seismic Warning Systems. “We are looking forward to sharing seismic data and networks, enhancing the monitoring and understanding of regional faults, improving earthquake warning, and collaborating on scientific research.”

In its unique position at UC San Diego to understand and protect the planet, Scripps Oceanography is developing new, science-based solutions to a host of daunting challenges and opportunities—climate change impacts and adaptation, human health and the oceans, resilience to hazards, and innovative observation for the planet.

Additional comments about the ANZA Network:

“The Anza seismic network is arguably the highest-quality seismic network on Earth. The last 20 years of research in seismology and related fields has dramatically increased our fundamental understanding of earthquake physics. Data from ANZA have played an important role in these developments.”

— *Professor Gary Pavlis, Department of Geological Sciences, Indiana University*

“The ANZA network has provided real-time data for decades through a dedicated wireless network. The network, now part of the original NSF-funded High Performance Wireless Research and Education Network (HPWREN), has been remarkably stable with data delivery reliability in excess of 99 percent. The open network continues to provide academic and government users of seismological data with important data from Southern California for both research and operational seismology through modern, well-documented software. I fully expect the network to grow in coverage in the future while adapting to the newest cyberinfrastructure.”

— *John Orcutt, Distinguished Professor of Geophysics, UC San Diego/Scripps Institution of Oceanography/Cecil and Ida Green Institute of Geophysics and Planetary Physics*

“The ANZA seismic network produces high quality continuous waveform data from stations covering the most seismically active region in California. These data include both broadband and strong motion, and are used by seismologists worldwide to study earthquake source physics and wave propagation phenomena both in the near source, as well as from large global earthquakes. While this network is poised to record the highly anticipated magnitude 6-7 Anza Gap event on the San Jacinto fault zone, it is also providing a wealth of data from thousands of smaller events that have been used for more than 25 years to train the next generation of seismologists.”

— *Jamison H. Steidl, Ph.D., Research Seismologist, Earth Research Institute, Adjunct Professor, Earth Science, UC Santa Barbara*

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About Seismic Warning Systems Inc.

Headquartered in Scotts Valley, California and founded by George Dickson III in 2000, Seismic Warning Systems designs and manufactures systems and services that provide reliable earthquake detection coupled with an automated and actionable system response. Seismic Warning Systems partners with commercial, industrial and government customers that seek to avert human injury, mitigate earthquake damage to property and other assets, and ensure business continuity. Seismic Warning Systems also serves on the California Governor’s Office of Emergency Services (CalOES) Earthquake Early Warning Working Group to help provide direction and options for the fulfillment of statewide earthquake warning solutions via public-private partnerships. During this time, the company’s patented family of QuakeGuard™ seismic detection products have detected and acted upon many potentially dangerous quakes, saving lives and protecting against injury — all without a single false alarm. For regular updates, follow us on [Twitter](#) or [LinkedIn](#), become a fan at [Facebook](#), or visit www.SeismicWarning.com.

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About Scripps Oceanography

Scripps Institution of Oceanography at the University of California, San Diego, is one of the oldest, largest, and most important centers for global science research and education in the world. Now in its second century of discovery, the scientific scope of the institution has grown to include biological, physical, chemical, geological, geophysical, and atmospheric studies of the earth as a system. Hundreds of research programs covering a wide range of scientific areas are under way today on every continent and in every ocean. The institution has a staff of more than 1,400 and annual expenditures of approximately \$195 million from federal, state, and private sources. Scripps operates oceanographic research vessels recognized worldwide for their outstanding capabilities. Equipped with innovative instruments for ocean exploration, these ships constitute mobile laboratories and observatories that serve students and researchers from institutions throughout the world. Birch Aquarium at Scripps serves as the interpretive center of the institution and showcases Scripps research and a diverse array of marine life through exhibits and programming for more than 430,000 visitors each year. Learn more at scripps.ucsd.edu and follow us at [Facebook](#), [Twitter](#), and [Instagram](#).

About UC San Diego

The University of California, San Diego is a student-centered, research-focused, service-oriented public institution that provides opportunity for all. Recognized as one of the top 15 research universities worldwide and born of a culture of collaboration, UC San Diego sparks discoveries that advance society, drive economic growth and positively impact the world. Our students, who learn from Nobel laureates, MacArthur Fellows and National Academy members, are committed to public service. For the sixth consecutive year, UC San Diego has been ranked first in the nation based on research, civic engagement and social mobility. We are one campus with multiple pillars of excellence, a top ten public university that is transforming lives, shaping new disciplines and advancing the frontiers of knowledge. Learn more at www.ucsd.edu.

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