

UC SANTA BARBARA

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## **\_x000B\_TALKING SIGNS AND RECEIVERS HELP BLIND TRANSIT PASSENGERS**

A promising and inexpensive new technology is helping the blind to travel independently.

A new system of talking signs and mobile receivers -- which can be programmed in any language -- has been tested on blind travelers in Santa Barbara, California. The users were able to navigate an unfamiliar building and transit stops, greatly increasing their spatial information, use of public transit, and independence.

The results of the final phase of a three-year project by geographers at the University of California, Santa Barbara will be reported at the 95th annual meeting of the Association of American Geographers in Honolulu, Hawaii on Friday, March 26.

Reginald G. Golledge, professor of geography at the UC, Santa Barbara, and graduate student James Marston found that blind persons with as little as five minutes of training were able to use receivers to locate ticket machines, exits, information windows, and telephones much more quickly than those without receivers.

In fact, after disembarking, some blind travelers found the bus terminal doors within twenty seconds, compared to five minutes without the

receivers. A total of 27 visually-impaired subjects participated in the terminal study.

"The difference is striking," said Golledge. "This proves that potential independence could be dramatically increased. It's so simple, and helps so much."

The study, funded by a consortium including the PATH unit of the University of California Transport Center and Caltrans, examined how high-tech transmitters and receivers could allow the blind greater access to public transit. Talking Signs, Inc. provided the equipment used in buses, the terminal, and at transit stops around the city.

Beginning in April, the talking signs research will expand in scale with a project in San Francisco . With municipal help, Smith Kettlewell Eye Institute of San Francisco has installed transmitters at various points in the city's large and complex transit system, such as the Powell Street station, where BART and MUNI lines intersect.

Golledge, who is blind, has been a leader in researching a variety of technologies to assist the blind in navigating independently. He is known for his navigation research, with psychologists Jack Loomis and Roberta Klatzky, which focused on using Global Positioning Systems (GPS) with Geographic Information Systems (GIS) and a Virtual Auditory Display to build a testbed Personal Guidance System for blind travelers.

Other research by Golledge includes work with Don Parkes, professor emeritus of the University of Newcastle, Australia, in developing a tactile-auditory information system called NOMAD, and in co-operation with graduate researcher Dan Jacobson and colleagues in computer science, music and psychology to investigate haptic soundscapes.

The technology for the talking signs project is surprisingly affordable, according to Golledge. Transmitters at transit stops or buildings cost about \$450, while receivers for individual users are about \$150. The receivers can be programmed in a variety of languages, allowing the possibility for international visitors to hear instructions in their native tongue as they explore a new city on their own. More information on the Talking Signs Inc. transit project is available at the following web page:

<http://www.talkingsigns.com/calpath.shtml>

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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.