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## **Researchers' technology helps lost find their way**

**By GREG BLUESTEIN**

The Associated Press

ATLANTA - Satellite-based navigation gadgets can guide motorists from high above, saving bumbling drivers countless hours and extra trips to the gasoline station. But directing people on a much smaller scale - such as inside an office - is a much greater challenge.

▫ Locator equipment based on Global Positioning System satellites is accurate to about 10 feet - fine for drivers searching for the next right turn but not for pedestrians seeking a front door. And the range of GPS is limited indoors, and it can't differentiate between a path and a wall.

Georgia Institute of Technology researchers are trying to pick up where GPS leaves off. Its System for Wearable Audio Navigation, or SWAN, consists of a wearable computer connected to a headband packed with sensors that help sight-impaired users know where they are and how to get where they're going.

Besides a pendant-size wireless GPS tracker, there are light sensors and thermometers that help distinguish between indoors and outdoors. Cameras gauge how far away objects and obstacles are. A compass establishes direction. And an inertia detector tracks the roll, pitch and yaw of the user's head.

All of the data are crunched by a computer in a backpack, which relays high-pitch sonar-like signals that direct users to their destinations. It also works with a database of maps and floor plans to help pinpoint each sidewalk, door, hall and stairwell.

Bruce Walker, an assistant psychology professor who helped develop the system, said that in a few years it could be used to help guide blind people, first-responders to emergencies or soldiers through unknown territory.

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