

'Audio Aquarium' Technology Helps Blind 'See' Fish

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As brightly colored fish dart in and out of the rocks scattered in a small aquarium, a bewildering melody follows each of their movements.

The eerie symphony comes from an "audio aquarium," a contraption dreamed up by Georgia Tech scientists as a way to let blind people experience sea life.

The researchers say they wanted to help people with disabilities do something that's more fun than functional.

"Many of the things we do help them solve basic problems — shopping, working, brushing their teeth," says Bruce Walker, an associate professor who works with the school's Center for Music Technology. "There are very few assistive technologies that help them do the fun stuff."

Consider the aquarium firmly in the latter category.

It works through a camera that uses recognition software that tracks objects based on their shape and color.

The software then links each movement to different instruments that change in pitch and tempo as the fish patrol the tank.

Fish that move toward the surface have a higher pitch. The faster they move, the faster the tempo.

Anisio Correia, who is blind, enjoyed an early test of the audio aquarium. Correia said that when he takes his 12-year-old daughter to the aquarium, "the only enjoyment I get is from her reactions."

"Anytime you try to make an experience like that more accessible, it's a wonderful thing," said Correia, a vice president with the Atlanta-based Center for the Visually Impaired.

Walker and his colleagues hope to install their invention in aquariums and zoos across the nation.

He has started talking with the Tennessee Aquarium, and he hopes to strike a deal with the world's largest fish tank, the Georgia Aquarium, which sits just down the street.

The music can be pretty mesmerizing, even psychedelic. And scientists can rig it to extend well beyond aquariums.

Walker has used the same technology to track ants, animals — even kids playing in a soccer game.

He pulls up a screen on his PC that shows a trio of ants marching to a crazy tune. One makes a high-hat drum pop as it wanders a tiny cell. Another controls a plucky guitar. Even Walker can't help but shrug as he watches the insects create a jazzy harmony.

"This is trippy," he says.

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