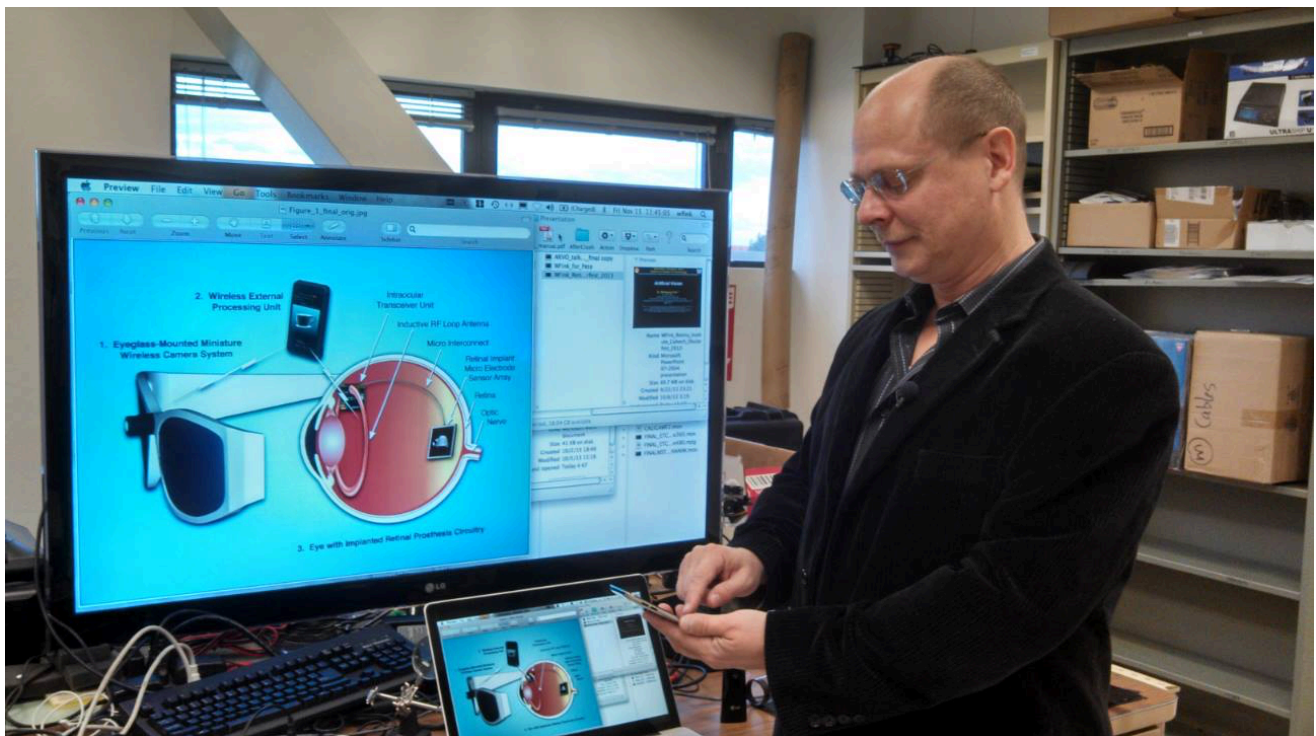


# Tucson scientist has new vision for people who have lost their sight



TUCSON, AZ (Tucson News Now) -

New technology is helping some blind people see again, but a University of Arizona researcher says it can be even better.

The Food and Drug Administration recently approved a retinal implant for people whose retinas have been damaged by disease.

UA Associate Professor of Engineering Dr. Wolfgang Fink believes he and his colleagues can improve the implant and help once-blind people see better.

Fink is working to help patients who have lost their sight because of retinitis pigmentosa or macular degeneration.

Disease can destroy part of the eye's retina.

Then the retina can't process the light that goes into the eye so it can't send a signal to the brain to generate vision, to let us see.

The artificial retina basically works by using a camera, a processor--it could be a smartphone--and a chip in the eye.

"Basically, what the processing unit does is take the camera image, make it into a format communicable by the chip and we then stimulate in a way that the patient sees what the processing unit has generated."

However, the implant allows patients to see only light and vague shapes.

"Current implant carriers cannot make out a black object against a bright sky. For example, a bird or a plane flying by," says Dr. Fink.

He and his colleagues are developing software that can improve current retinal implants, letting a person see that bird or plane.

"With our technology our patients will be able to track that and see this," Dr. Fink says. "We're trying to enhance the fairly limited vision which can be stimulated with these implants to the point that the subject can discern objects, can function in daily life."

Fink says improving resolution would help people read smaller fonts.

Patients with the implants would not need more surgery.

They would just have their software upgraded.

"What you want to know is the outline of a person, the silhouette of a person. You would want to know where the frame is of a door, so you can actually find the door."

And using the smartphone, a patient would be able to manipulate the image with filters to make it more comfortable to look at, depending on the patient's needs.

Fink says he wants to improve the quality of life of patients, make it easier to navigate the world to the degree possible.

But there's more. It's something that really can't be measured.

"Make out faces of loved ones, even capture emotions in people by looking at the facial expression. That would be phenomenal. And that is something which is attainable," Dr. Fink says.

He believes the new and improved artificial vision could be ready in two to three years.

Fink also thinks this concept could someday be applied to help people who have Parkinson's disease, epilepsy and paralysis.

Fink's research has U.S. government and private funding.

To learn more about the recently-approved retinal implant click [here](#).

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