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Photo by Krystian Hlebowicz

Engineering professor Ron Miles will study hearing aids with \$6.5 million from the federal government.

Grant for hearing study is BU's largest

By Michael Marrero
Staff Writer

The National Institute of Health awarded Binghamton University professor Ron Miles a \$6.5 million grant to develop directional microphones, which can be used to help the hearing impaired.

Miles, a mechanical engineering professor and chairman of the department, is working on a project called "Sensing and Processing for Directional Hearing Aids," which will improve microphones within hearing aids.

"We've got ideas that could make very substantial improvements in microphone technology, and that's why N.I.H. gave us all this money," Miles said. "They hope for, I want to use the word revolutionary advances in technology for the hearing impaired."

The idea for these microphones came from research that Miles conducted with Ron Hoy and Daniel Robert of Cornell University involving the hearing mechanisms in small animals. According to Miles, the grant was given to extend their work in order to incorporate a new way of obtaining an electrical signal from a microphone.

Miles said some of the microphones that have already been created are only millimeters big and wafer-thin.

"The main focus is on developing unique microphone technology that creates sensors that respond preferentially, so we've got unusual ways of making very, very small microphones that reject sound from certain direction, so they only respond to the

direction that you aim them in," Miles said.

Miles said the applications of this are to make directional microphones for hearing aids, so that when someone is wearing a hearing aid it responds more to sound from the front than all around them and this improves their ability to communicate in noisy places, which is a big problem for hearing aid wearers.

N.I.H. is not the only organization interested in Miles' work.

The numerous applications for his work have attracted attention from groups, including the military, which has funded his work through the Defense Advanced Research Projects Agency.

"We've made a little gadget that aims a camera, so that if you go up to this thing and make a noise the camera points at you, and that works very well, so the military is interested in that," Miles said.

He sees this technology also expanding into computers and automobiles.

"There's a lot of interest in being able to communicate with your computer by talking to it, 'Check my e-mail,'" he said. "That's an area that a lot of people are investing a lot of money in right now and resources, to improve the ability of a computer to process your sound, your speech, to understand it."

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