

Computer Science Professor Receives NSF Grant to Bring Wireless Tech to Rural Africa

Researchers Elizabeth Belding of Computer Science and Lisa Parks of Film & Media Studies Receive \$1.2 Million for New Wireless Network Technology That Will Bring Zambia Online



The city of Macha, located in the southern province of Zambia in sub-Saharan Africa, has a population of roughly 130,000. It also has Internet connectivity, but for only a small group of users - perhaps 300 in all. With a \$1.2 million grant from the National Science Foundation (NSF), UC Santa Barbara scholars Elizabeth Belding and Lisa Parks are embarking on a project that will bring the information superhighway to the homes and businesses of everyone in the local community.

"The idea of the work is to build wireless networks solutions to help bridge the digital divide and bring more people online," said Belding, a professor of computer science. "Our goal is to improve performance, get connectivity to everyone - not just a limited subset of the population - and improve the user experience." To accomplish that, Belding's research group is working at the frontiers of wireless networking, developing a lot of technology that, at this point, doesn't exist.

"In terms of wireless links and how data is sent from computer to computer within the community, we are in the process of developing wireless network technology to utilize new spectrum," Belding continued. "With radio, for example, each channel is on a different frequency. Radio utilizes different spectrum from TV, which uses different spectrum from Wi-Fi. New spectrum is becoming available that hasn't been leveraged yet, but has really good properties for what we want to do."

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