Technology provides improved access for disabled voters

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A University of Florida researcher's desire to provide citizens with disabilities the same opportunity to vote as everyone else could serve as the catalyst for revolutionizing voter access nationwide.

Juan Gilbert's Prime III, an [electronic voting machine](#) a decade in the making, has debuted in [primary elections](#) in several states. Officials in New Hampshire were so impressed with Prime III's performance that they plan to use it in additional precincts in the upcoming general election.

"It was even more seamless than we thought it would be," said New Hampshire Assistant Secretary of State Thomas Manning. "Our intention long range is to get to the point where every one of our polling places uses Prime III."

The uniqueness of Prime III lies in its ability to allow voters to cast ballots by tapping a [touch screen](#) or speaking into a microphone. Those who can't articulate a candidate's name have the option of blowing into the microphone, and those who have trouble reading or seeing the screen receive audio instructions via headphones.

Gilbert, Associate Chair of Research in UF's Computer & Information Science & Engineering Department, specializes in the relatively new field of Human Centered Computing. He developed Prime III technology with help from more than a dozen research assistants and a $4.5 million grant from the U.S. Election Assistance Commission.

Along with the funding came the charge to lead a three-year project to increase the accessibility of new, existing and emerging technological solutions in the design of voting systems. The result is an electronic voting system that Gilbert describes as the world's most accessible voting technology every created.

"It allows people from all walks of life, abilities or disabilities to vote universally on the same machine," Gilbert said. "It also gives voters peace of mind that their vote is secure and will be counted."

That sort of confidence is assured, Gilbert said, with the insertion of a blank ballot into a printer for each voter. Only the choices the voter makes regarding contests and candidates are recorded, eliminating potential confusion about intent. Each ballot then goes into a ballot box and is later scanned, creating a paper trail.

According to a research report compiled at Rutgers University, 15.6 million people with disabilities reported voting in the November 2012 elections, a turnout 5.7 percentage points lower than that for people without disabilities. There would be 3 million more voters with disabilities if they voted at the same rate as people without disabilities who are otherwise similar in age and other demographic characteristics, according to the report.

Gilbert first introduced Prime III at the Alabama Institute for the Deaf and Blind. Residents at several Oregon rehabilitation and independent-living centers used the system to vote during the 2012 presidential primary, and last spring, Gilbert introduced it to disabled voters during Wisconsin's mid-term election.

Hoping to interest Florida elections officials in Prime III, as well as another voting system he created that will allow overseas military personnel to vote privately and securely, Gilbert met recently with

elections supervisors in Polk, Leon and Okaloosa counties.

Polk County elections supervisor Lori Edwards sees potential for a state still dealing with fallout from the infamous "hanging chad" incident during the 2000 presidential election.

"I'm enthusiastic about this groundbreaking work," Edwards said. "This is the first successful version of this type of software that I have seen."

Gilbert, 45, is a Fellow of the American Association of the Advancement of Science and a 2012 recipient of the Presidential Award of Excellence in Science, Mathematics and Engineering Mentoring. He has received more than $25 million to fund his research from organizations such as the National Science Foundation.

"My aim throughout my career has been to combine the accessibility afforded by computer technology with old-fashioned simplicity, including a paper ballot for backup and verification," Gilbert said. "Our success in this area is changing the way voting is done in this country."

Recently named one of the 50 most important African-Americans in Technology, Gilbert is among a roster of nationally recognized faculty members hired by the University of Florida as part of the state Legislature's Preeminence Plan, the goal of which is to assist the university in its quest to become a Top 10 public research institution.

Gilbert holds the Andrew Banks Family Preeminence Endowed Chair. His research projects span spoken language systems, advanced learning technologies, usability and accessibility, culturally relevant computing and databases and data mining.

Provided by University of Florida