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## Losing Sight, Finding a New Vision

**Blind woman provides inspiration  
for research to improve technology access.**

by JANE M. SANDERS

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While an active forty-something mother and business professional, Virginia Jacko began to gradually lose her vision to an insidious disease called retinitis pigmentosa. It robs people of their peripheral vision first and then slowly steals the sight that remains.

“With the disease I have, I lost sight from the outside in,” explains Virginia, now 62, who was diagnosed in 1995. “I could look centrally and read 20/20.... But I would bump into things and have poor orientation walking down the street.”

In the workplace, Virginia struggled to use the same technology she had always used to do her job. “On my computer, I would make the icons bigger, but that was actually the last thing I needed because of my narrow field of vision,” she recalls. “I wanted



things small and dark... I thought if only I could move the icons to where I had vision, if I could ask the computer some key questions and maybe change the background, I could keep my dignity and not have to ask the IT (information technology) guys for help.”

Virginia Jacko lost her vision to a disease called retinitis pigmentosa. But she has learned to adapt with help from her yellow Labrador retriever guide dog “Tracker” and her innovative daughter, who is leading development of software that will provide visually challenged computer users with multiple feedback mechanisms.

Photo Courtesy Virginia Jacko

For a long time, Virginia’s staff didn’t know about her vision loss. “I chose not to tell them,” she explains. “I could read a small-print spreadsheet because of my central vision, and people thought I was OK because I could read small print.”

But the disease advanced, and by 2000, Virginia became “legally blind” – occurring when a person’s corrected visual acuity is equal to or worse than 20/200 or they have less than a 20-degree field of vision in the better eye. Still, she continued to work as the director of fiscal affairs for the president and provost of Purdue University. But about three years ago, she had to retire on disability benefits. Now, Virginia is totally blind.

“I pushed myself as far as I could when I was working,” she recalls. “I had a very good 24-year career in a very high profile job... When my vision worsened, I would do things by habit and from experience. I knew the financial workings of the university. I am blessed with an excellent memory that served me well.”

After leaving her job, Virginia attended rehabilitation training classes, learned Braille and got a guide dog to help her get around. Now with her guide dog in tow, she can manage her life independently.

Using speech interface software, Virginia uses her computer daily to email family and friends and surf the Internet. “I’m a very good typist,” Virginia notes. “I memorize the Microsoft keystrokes to open programs, go to the Internet and to tell the screen reader to read something on the screen. It’s just a different way of doing things.”

Compared to people who experience vision loss later in life and don’t know about new ways to use technology, Virginia feels blessed, she says.

“I learned how to use a computer when things were in DOS (an operating system driven by typed-in commands),” she recalls. “You did everything with keystrokes. When Microsoft started to get big, everything was icon driven, and suddenly I started to realize the icons were jumping in and out of my vision.”

It was then that Virginia's struggle with technology inspired research by her daughter – Georgia Tech Associate Professor Julie Jacko, an expert in human/computer interaction – to make computer graphical user interfaces (e.g., file and folder icons, drop-down menus) accessible to people with low vision.

“I said to Julie, ‘There’s got to be a way to make adjustments on the computer for people with low vision,’” Virginia says. “We have the Microsoft Accessibility Wizard™ that can adapt the screen, but one size doesn’t fit all people with low vision. When there are only sighted programmers working on this problem, they think about legally blind people like everyone else does -- just make it bigger. But I wanted the type to be small in my narrow field of central vision.”

Now an advocate for low-vision and blind people, Virginia says research related to improving the quality of life for these groups often doesn’t include vision-impaired subjects. “So one of the greatest benefits Julie is contributing to the low-vision population is the use of low-vision subjects to guide the interface design work and test it,” she adds. “It’s difficult to do research involving people with low vision. It takes more work than using sighted people.”

Virginia is hopeful that the software her daughter is developing eventually will be used not just on desktop computers, but on other devices, such as cell phones, DVD players and even home appliances.

“Design to make these devices accessible to people with low vision is also a better design for everybody -- just like curb cuts and electronic doors are,” Virginia notes. “I really believe good design is design with a universal application. Then no one is excluded.”

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