

innovator OF THE YEAR

CORINNA E. LATHAN

2002 TOP INNOVATOR OF THE YEAR

Robotics with a human touch

By Alan Dessoff

Corinna E. Lathan, Ph.D., is creating tomorrow's products by integrating today's technologies. Her research efforts to "harmonize humans and their environments" through the use of advanced technology have resulted in exciting new applications of virtual reality, robotics and telecommunications.

Her desire to make this technology available, particularly for people with disabilities, led her to found AnthroTronix Inc. in College Park. Its core technology is wireless gestural interfacing between humans and machines.

Funded by commercial and institutional R&D contracts, AnthroTronix has turned its core technology into a tangible product — an innovative robotic telerehabilitation tool to improve the capabilities of disabled people. The product utilizes technology that enables control of electronic devices through body movement or gestures, thus providing therapeutic as well as educational and entertainment value to its users — particularly special-needs children.

It differs from standard rehabilitation tools in that it replicates and records a child's movements while providing monitoring access using the Internet. AnthroTronix will market the product as an interactive robot toy, CosmoBot.



Corinna E. Lathan, founder of AnthroTronix Inc.

The robot operates in three modes: One mimics the gestures made by the child's physical motion or voice; another allows the child to record sound and movement and play it back, and the third leads the child through interactive games or stories that a therapist or teacher can download from a Web-based software interface, CosmoWeb.

While one-on-one therapy is the most effective intervention for children with disabilities, there are difficulties. It is labor-intensive for therapists to keep a child's attention and continually motivate the child to stay on task. Also, children do not always perform necessary follow-up exercises or homework. Further, their access to therapy may be limited by financial restraints and the difficulties of arranging transportation to a therapist.

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"Lathan is a compassionate person. When you watch her work with the kids, she's just a jewel." - Carl Pompei, Executive Vice President, AnthroTronix Inc.

CosmoBot and the Web-based program allow patients to complete their therapy from home — eliminating the need for a trip to the therapist or a doctor. Progress reports can be relayed through the Web-based interface, and program adjustments can be made as needed through the Internet.

Lathan believes most existing products for children are either expensively modified off-the-shelf toys, or they are not designed with the disability population in mind. CosmoBot is universally accessible because a user can control it through almost any part of the body or by voice activation. It provides immediate feedback, enables children to be in complete control of its movements and sound, and it is nonthreatening and playful.



AnthroTronix's CosmoBot, a robotic telerehabilitation tool, uses technology that enables control of electronic devices through body movement or gestures, thus providing therapeutic as well as educational and entertainment value to its users.

The parent of a child with cerebral palsy who uses CosmoBot said, "I think it helps him develop his self-esteem. There are a lot of things he can't do physically, but to be able to move just a little bit and have something respond, I think just gives him an internal boost."

With effort and an innovative spirit, Lathan also is creating future opportunities for many young women by increasing diversity in engineering. While a graduate student at MIT, Lathan founded the Keys to Empowering Youth (KEY) program for junior high school girls.

Carl Pompei, executive vice president of AnthroTronix, says this of Lathan: She "is a compassionate person. When you watch her work with the kids, she's just a jewel."

KEY continues to be one of the Public Service Center's core programs and has won outreach awards at MIT. To promote these efforts, Lathan serves in various national organizations, including the National Academy of Engineering Forum on Diversity.