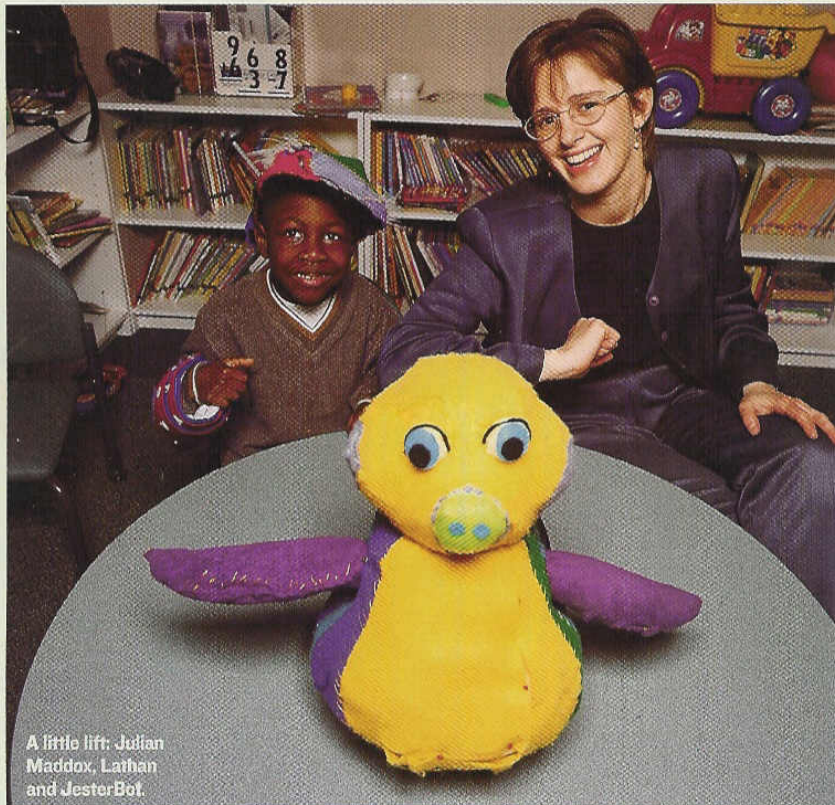


ROBO-THERAPY

Corinna Lathan is making devices to help disabled kids have a little fun while they're doing their exercises. Any investors out there?



A little lift: Julian Maddox, Lathan and JesterBot.

BY NICOLE RIDGWAY

JULIAN MADDOX'S FACE LIGHTS UP as he puts on a multicolored hat. This isn't like his usual visit to Mt. Washington Pediatric Hospital, in Cheverly, Md., where the 6-year-old undergoes weekly physical therapy ses-

sions for cerebral palsy. Julian sits in the waiting room nodding his head forward then pushing it back, all the while giggling and clapping. Each time he moves his head, the Muppet-like robot on the floor mimics him with a whizzing sound and a jerky nod. Julian

gives one more shake and the robot's head falls off.

"It looks like we're going to need industrial-strength Velcro for the head," says Corinna Lathan, cofounder of AnthroTronix, the College Park, Md. designer of the robot. Earlier in the day cofounder Jack M. Vice made a quick trip to Radio Shack to replace a speaker that short-circuited. "Every day the technology is changing. We're constantly improving upon it," she says.

Once the technical kinks are worked out, Lathan hopes the JesterBot will become a standard therapeutic tool for children with speech, learning and physical disabilities—a market of 4.5 million kids between the ages of 3 and 14. AnthroTronix has taken baby steps to that goal. So far six kids have worked with the robot at Mt. Washington. According to Dr. Katharine Alter, a medical director and pediatric physiatrist, they have shown "measurable improvements" in muscular control.

Here's how it works. A child puts on leg- or armbands or a hat embedded with radio transceivers and sensors. By waving a hand, say, or nodding her head, she sends out radio signals that are interpreted by a central processing unit in the JesterBot, which mimics her actions (see diagram, p. 218). Visual feedback of movements creates a sense of play and

D. A. PETERSON FOR FORBES

control. Using this “gestural interface,” the robot can also be programmed to guide a child through games like Simon Says. During exercises, the JesterBot can gauge a child’s range of motion, while electronically reporting the results of the session to a therapist via a data port hooked up to a PC. Those data can be accessed online at any time; a therapist need not be on-site to prescribe new exercises.

Lathan, who has a master’s in aero-

need at least \$3.5 million on top of the \$500,000 to \$1 million in R&D contracts Lathan expects this year. That’s to replace the robot’s piecemeal electronics with customized chips, battery packs, transmitters and sensors, as well as to complete testing and ramp up production. Holding down costs will be a challenge. AnthroTronix plans to hire 20 salespeople and other staffers in the next year, tripling the current size of its staff and increasing its sales and mar-

a second round of funding.

That cash could help AnthroTronix tap into a rich vein. Given industry data, Lathan estimates that toys for disabled kids make up a highly splintered \$2 billion market. Giants like Mattel and Hasbro have avoided this niche market because it’s so R&D intensive. They can get larger net profit margins—as high as 10%—with most of what they put on toy shelves; Lathan will be lucky to get 1.6%. Most rehab devices are made by small, independent shops that have a single offering to address a specific need. They tend to be simple products, incorporating an on/off switch that a disabled child can easily manipulate; they usually don’t allow for a full range of muscle movements as JesterBot does.

Therapeutic devices are expensive—as much as ten times the price of high-tech toys made for able-bodied children. To cut the cost of the JesterBot to around \$100 for an off-the-shelf version (not including an additional monthly fee for JesterWeb service), Lathan has a pending licensing agreement with Toytech Creations, a \$3 million (sales) Savage, Md.-based manufacturer, to produce a mass-market version of the robot for sale in toy-store chains. Working closely with Judd Nathanson, Toytech’s president, Lathan has altered certain design specs of the JesterBot so they can be made with standard injection molding and electronics equipment.

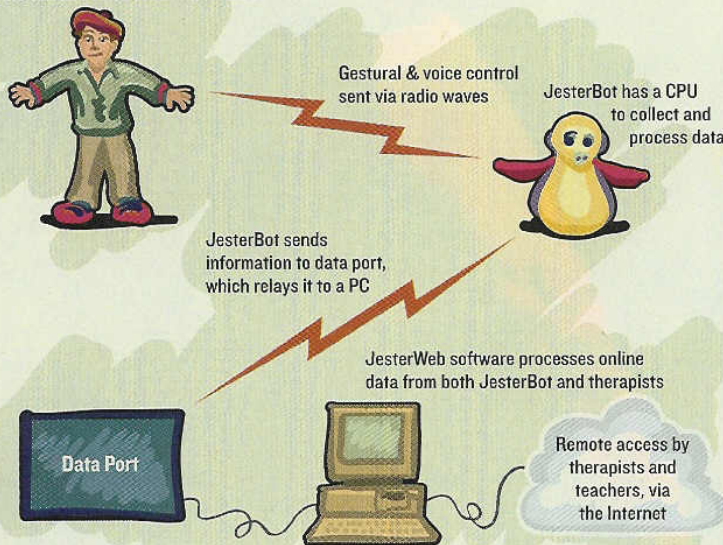
But the road ahead is deeply pocked with “ifs.” If AnthroTronix can close its first private placement by June, it may be able to roll out the first JesterBots 12 months later. If the company can then grab a targeted 6% of that market of 4.5 million disabled kids—that’s 270,000 children at \$50 wholesale revenues each—Lathan can meet a twentyfold jump in her production costs to \$8.4 million, and total operating expenses of \$13.1 million.

That’s a lot of suppositions—starting with whether Lathan and Vice can figure out how to attach the head to that robot.

Command and Control

Using special software and sensors, disabled kids can exercise with JesterBot.

Child wears hat, wristbands or legbands with sensors and transceivers to send motion and voice data to JesterBot



navics and astronautics, as well as a Ph.D. in neuroscience—all from MIT—has long been interested in rehab. As a professor of biomedical engineering at Catholic University, she looked into high-tech and telecom applications to help disabled children. A couple of research grants from the U.S. military and the Department of Education provided the cash—\$300,000 last year—to launch AnthroTronix and create a rough prototype of the JesterBot from recycled pieces of remote-controlled toy cars and garage-door openers. Having a rent-subsidized lab and office space at the University of Maryland helped Lathan do it all on the cheap.

But to scale up, AnthroTronix will

keting expenses to \$2.6 million, which includes a direct marketing campaign focused on private and public educational facilities that work with disabled children. At some point, Lathan, 33, will try to find reseller agreements to distribute her products to patients, parents and special education teachers.

Meantime, there’s money to raise. To that end, Lathan hired management consultant Carl Pompei, onetime chief executive of Mass Microsystems, a computer peripherals outfit, which he took public in 1989 and sold in 1993 to now-defunct computer-storage maker RamTek. Pompei drafted the company’s prospectus for a \$750,000 private placement. He is already planning