NORTHERN WESTCHESTER
EXPRESS
Thursday, February 1, 2007
The Journal News
PRE-SORTED STANDARD
U.S. POSTAGE PAID
WHITE PLAINS, NY
PERMIT NO. 5252
Armonk
Bedford
Bedford Hills
Chappaqua
Katonah
Mount Kisco
Pleasantville
Thornwood
LoHud.com

$2,000 grant gives teen a hand

Byram Hills junior aims to build more efficient prosthetics

Chris Serico
The Journal News

ARMONK — Jeremy Blum seeks to develop superior prosthetic technology, heads two technology businesses, and plans to own a design firm or engineering company in 10 years.

Not bad for a 16-year-old.

In December, the Byram Hills High School junior learned his three-year science project would be aided by a $2,000 grant from Mu Alpha Theta, a national math honor society.

For the school district's Authentic Science Research Program, Blum wonders "if force sensors mounted to the forearm can effectively and accurately control the movements of an intelligent prosthetic hand on an amputee," according to his grant application essay.

For his project, Blum spends an average of eight to nine hours each week building and refining models of a robotic hand with technology that could give amputees undisrupted and accurate control of their man-made appendages. He launched the project in the fall of 2005 and plans to complete his research and final prototypes by late this year or early 2008.

His work is inspiring, says his mother, Stacy Wilder.

"He's very calm, very cool about all of this," Wilder said. "He manages it with a lot of grace."

As of last week, Blum was working on programming the electronic code for the prosthetics. The first robot hand prototype opens and closes when pressure is applied to a sensor.

"As soon as I get that down and doing what I want it to do, the next stage will be building the second prototype, which has more degrees of freedom," he said.

Current prosthetic electrodes are only about 90 percent efficient, Blum said. But improved efficiency wouldn't be the only advantage to the technology Blum is developing.

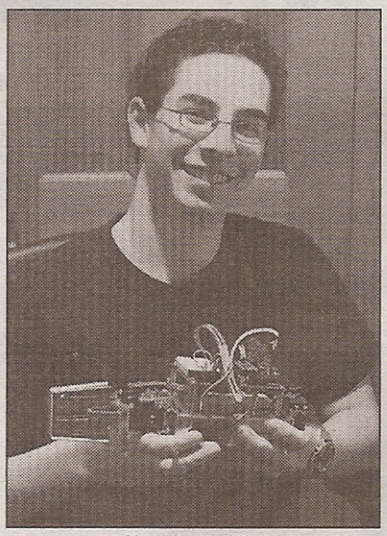
"It's not invasive, first of all; you don't need to have electrodes implanted," Blum said last week. "And secondly, it works based on physical input. So, it's really just movement, as opposed to (the prosthetic) trying to pick up on the electrical signals that a muscle sends out when it contracts."

About $800 of the Mu Alpha Theta grant has been dedicated to prosthetic parts and the remainder will be spent on travel expenses to meet this month with his mentor, Dr. Peter Kyberd of the University of New Brunswick in Canada. Kyberd's research involves "developing state-of-the-art cybernetic solutions to advance the capabilities of prosthetic systems designed to replace a complete human arm," according to the Canada Research Chairs Program's Web site.

When he's not working on what could be the next generation of prosthetics, Blum generates income from two businesses he co-founded. With classmate Greg Skloot, he fixes computers as a technician for Armonk Computer Solutions.

His father, Allen Blum, said Jeremy is part of a generation of technological risk-takers who reap the rewards of their curiosity.

"People like Jeremy — specifically with his talents — are far beyond risk-averse," Blum said.



Chris Serico/The Journal News
Jeremy Blum holds his prototype for intelligent prosthetics.

Reach Chris Serico at cserico@lohud.com.