

# **Assistive Technology: Technical Solutions for the Disabled**

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# The Assistive Technology Program (ATP)

Assistive Technology is the application of engineering and science to build solutions to help physically and mentally disabled individuals in their daily life



- Every Electrical Engineering and Computer Engineering senior does an AT project
  - ECE undergrad program for 15 years
  - Nationally recognized –senior projects published in NSF report
- Program supports over 20 local agencies
- Funded by the Zuckerberg trust fund, NSF
- 
- Service to an underserved community of mentally and physically disabled clients
- Students become more socially aware



# ATP offers opportunities for interdisciplinary projects



**SAVY RIDER:** His mobility severely limited by disease, Jonathan DiCiccio Roseme, shown above with his mother, Linda, tries out a motorized trike created for him by John Wiley and Mike Brigandi, below.

## Hot wheels

By KRISTIN EBERSON  
Immobility is the mother of invention for teen and friends

Jonathan DiCiccio Roseme's ride is decked out with chrome wheels, a custom paint job and an extra cushy seat that provides maximum comfort for cruising. But this 17-year-old's ride isn't a pricey Thunderbird. It's his new power trike. Jonathan has ankylosing spondylitis, a disease that causes joints to contract and limits their range of motion. Because of a surgically implanted metal rod on his spine, Jonathan can't bend past a 45-degree angle, making it nearly impossible for him to sit in a wheelchair.

So his father designed a trike years ago to help him get around.

Last week, Mike Brigandi and John Wiley, both 22 and recent engineering grads from UConn-Lowell, presented Jonathan with a "plumped out" three-wheeler they built as a class project.

"We realized he was in a tough situation and wanted to do something that would make his life easier," Brigandi said. "We knew he didn't like wheelchairs so it was really rewarding to make something that he does like."

The design was based on Jonathan's old trike, which had to be pushed around with his legs. Brigandi and Wiley beefed



up the new trike with a lightweight, durable steel frame, an adjustable seat and a battery-operated motor that can top up to 15 mph. "We suggest he wears a helmet," Wiley said. "This is really doing it your own ride." Jonathan's mother, Linda, believes her son is the only person with ankylosing spondylitis that uses a trike to get around.

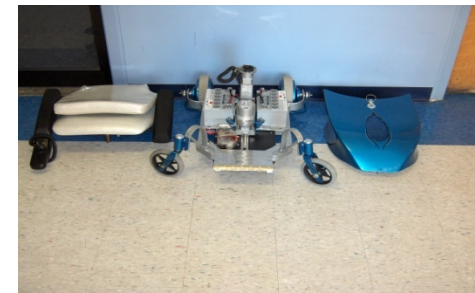
"A wheelchair doesn't allow him to get places like a trike could," said Linda. Jonathan is home-schooled and has just submitted college applications to schools in the area. He plans to study criminal psychology. "Whatever obstacle I am faced with I overcome," said Jonathan. "If I don't, then what else am I supposed to do?"



## Motorized Trike



## Page turner

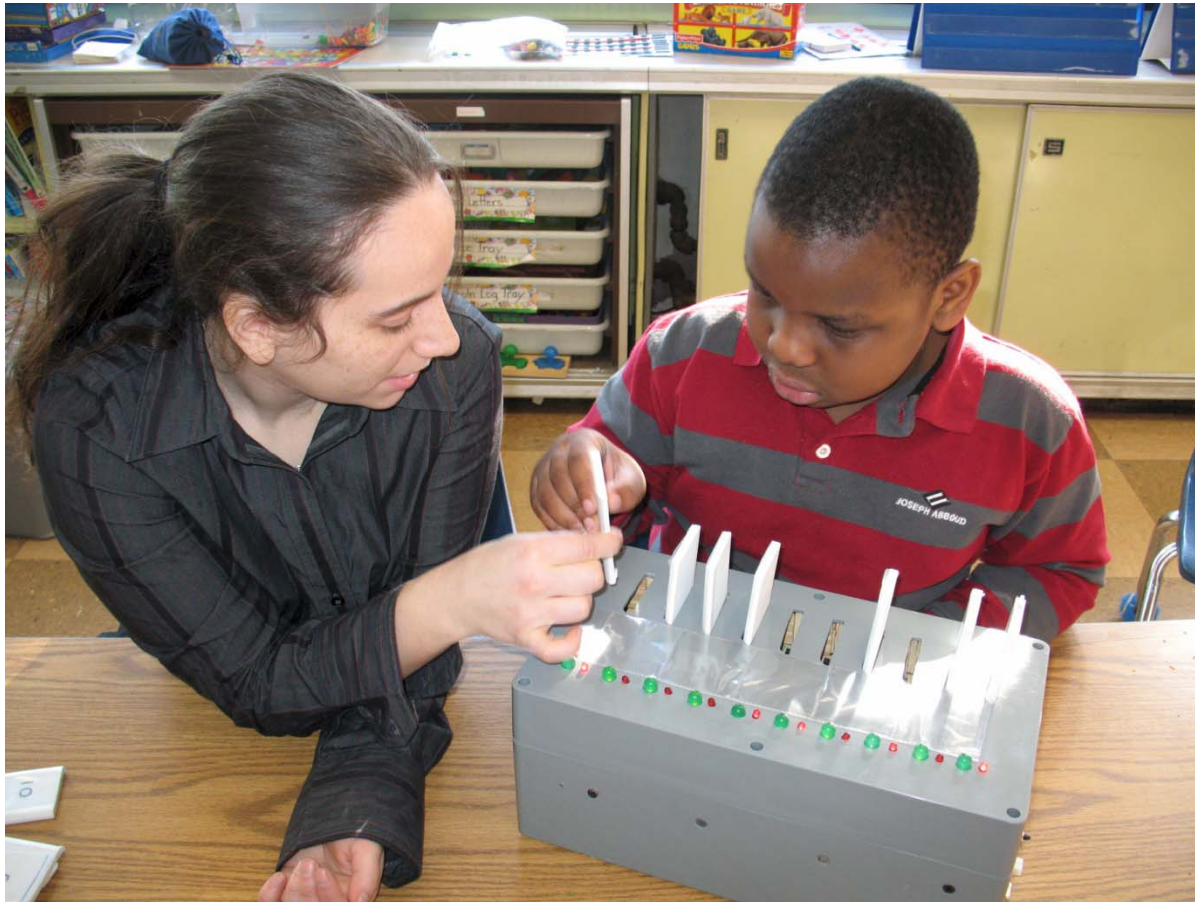


## Portable Wheelchair

# Examples of Assistive Technology Tools

- Voice recognition
- Chip accelerometers (senses motion)
- Touch screens
- Environmental Controls
- Biological sensors – like the “Mind Mouse”

# Special Need Education.



# Employment opportunity



# Creating Independence



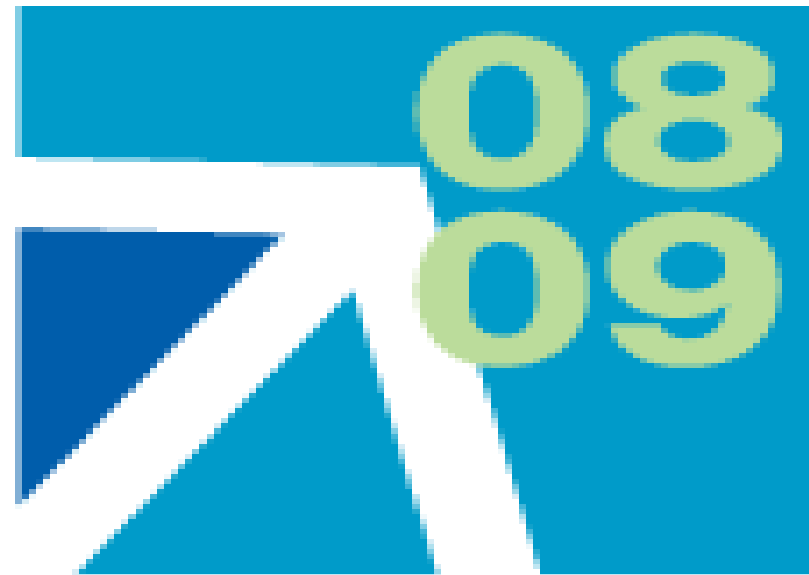


# Life altering Event



National Scholar Award for

**WORKPLACE**



**+ DESIGN**

**INNOVATION**

**Sponsored by NISH**  
Creating Employment Opportunities  
for People with Severe Disabilities

# National Scholar Award for Workplace Innovation & Design

- to encourage the development of creative technological solutions for barriers that prevent people with disabilities from entering or advancing in the workplace
- The National Scholar Award is open to any college student or **student team** at the graduate or undergraduate level.
- September 1, 2008 through April 24, 2009

# 2008-2009 NISH National Scholar Award!

- Program participants are strongly encouraged to enter the National Scholar Award Competition.
- **Cash Prizes up to \$10,000 are awarded,**
- With matching amounts given to the educational institution's department.

# 2008-2009 NISH National Scholar Award!

- – The project must involve the development of assistive technology. Applications for all assistive technology will be considered, but preference will be given for technology intended to impact the occupational potential of a client.
- – Student teams must be enrolled in a design course in an Engineering or Technology department.
- – Students teams must be supervised by a faculty member.

# **2008-2009 NISH National Scholar Award!**

- Program participants will be invited to attend the Design in Engineering Education Division's special panel session and/or workshop at the 2009 Annual conference and exhibition in Austin, TX.

# Quiz

- What is Assisted Technology Program (ATP)?