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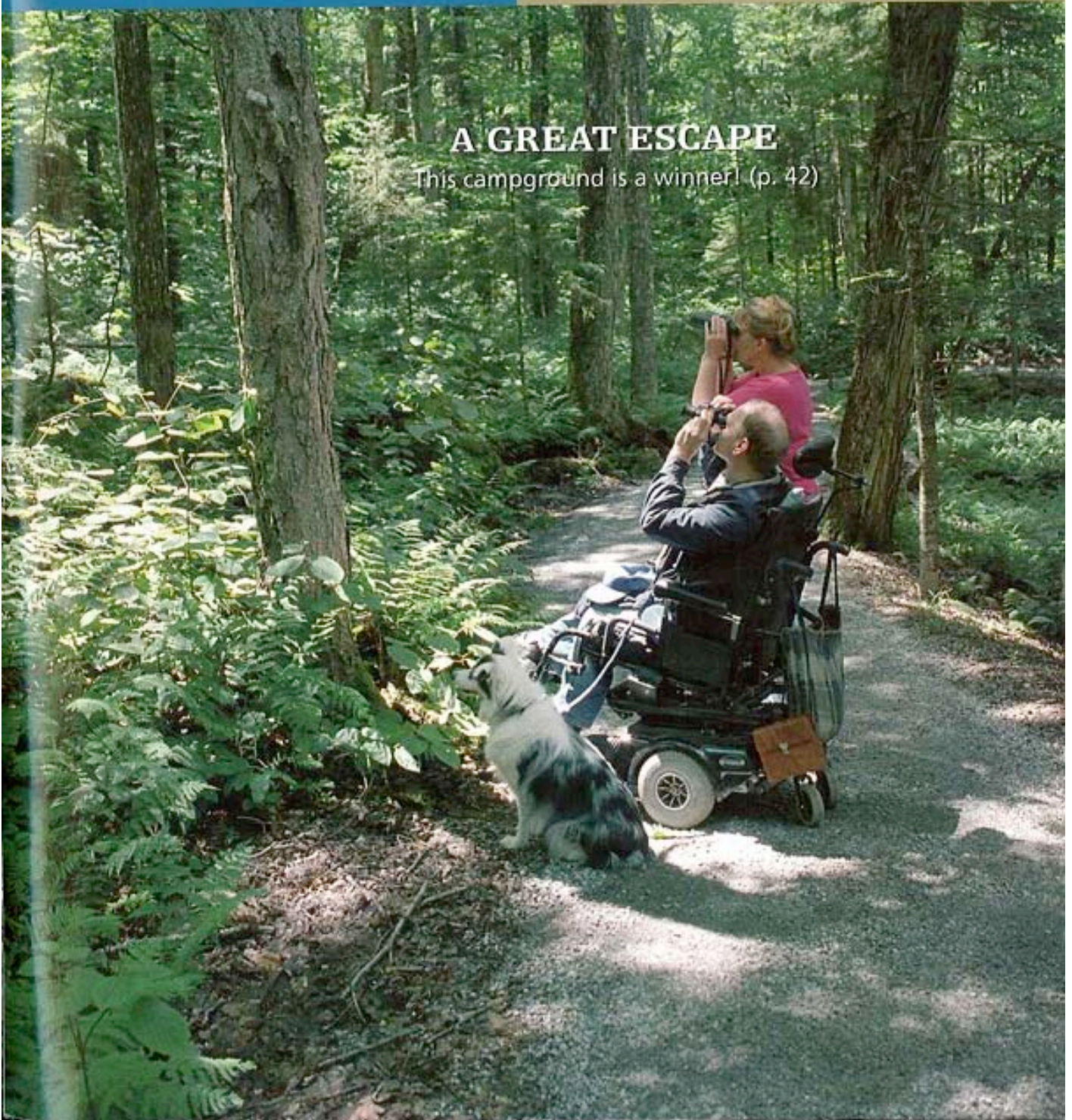
Assistive Technology
Don't just sit there, elevate!

Decision-makers
*Veterans' court judges
have a critical role*

Worth Every Effort
*Preparing for the Games
is an awesome task*

A GREAT ESCAPE

This campground is a winner! (p. 42)



Mind-controlled Wheelchair

Michael Callahan can speak and share his thoughts and ideas with others. This ability to communicate is the motivation behind his latest innovation. The 24-

compares signals from neck muscles and developed a fully functional wheelchair prototype that can be controlled by a person's thoughts.

"The amount of movement required to use [wheelchairs] makes them inaccessible to people with

Michael Callahan and his team of students and researchers have shown the ability to produce fluent speech with 70% accuracy from the neurological signals. He hopes this innovation will restore communication for millions of people with disabilities.

year-old winner of the first \$30,000 Lemelson-Illinois Student Prize hopes to help people with disabilities speak for themselves.

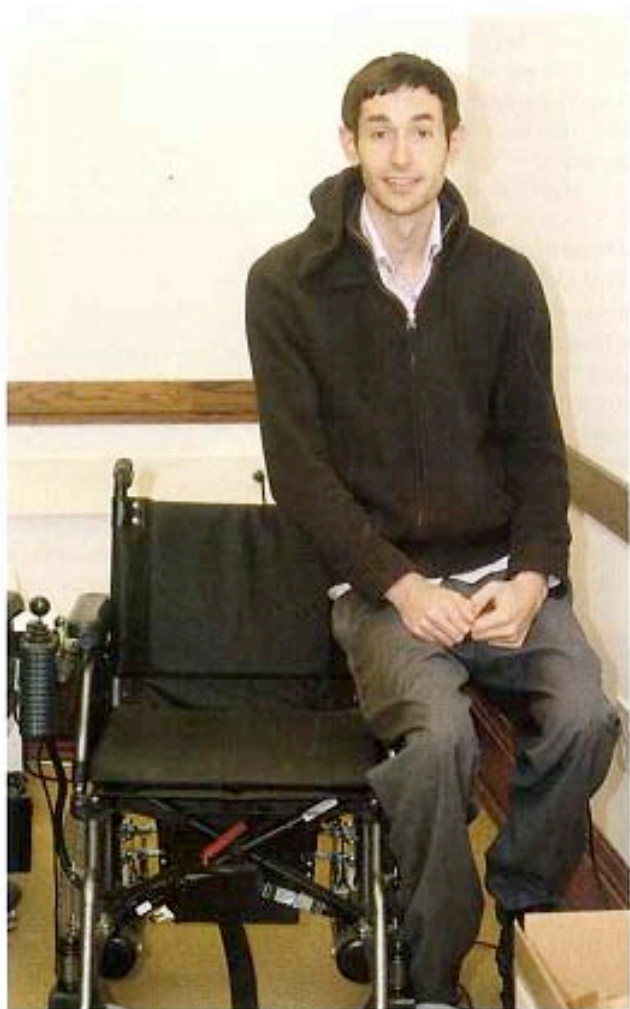
Callahan, a graduate student in Systems and Entrepreneurial Engineering at the University of Illinois at Urbana-Champaign, received the prestigious award for a variety of endeavors, including a device that turns thoughts into spoken words and a "mind-controlled" wheelchair.

His most recent invention is the Audeo, a device that translates neurological signals into spoken words or commands for other devices, such as a power wheelchair. Using the National Instruments LabVIEW graphical system design platform, he created an application that

severe disabilities," Callahan says. "Because our technology does not require physical movement, it has created an opportunity to bypass the communicative behaviors imposed by physical disability."

Callahan realizes the potential of this technology. He and his team of students and researchers have shown the ability to produce fluent speech with 70% accuracy from the neurological signals. He hopes this innovation will restore communication for millions of people with disabilities.

In December 2004, Callahan formed a partnership with the Rehabilitation Institute of Chicago (RIC). Support from RIC gave him access to their large client base and allowed him to



Graduate student Michael Callahan created a device that translates neurological signals into spoken words to command other devices, such as power chairs.

begin human-subject testing. In October 2005, he started a company, Ambient.

The \$30,000 Lemelson-Illinois Student Prize is funded through a partnership with the Lemelson-MIT Program, which has awarded the prize to outstanding student inventors at MIT since 1995.

It's "Magic"

Manual wheelchairs with rear-push wheels and front casters have changed little since being patented in 1869. Today, more than 100 years later, handrims and wheels remain about the same, and wheelchairs have only one speed—until now!

The latest big thing to hit the wheelchair market is something able-bodied bicyclists have been using for years.

Magic Wheels are all-mechanical, two-gear wheels that replace the standard spoke, mag, or power-assist wheels on manual wheelchairs. When in regular gear, they reportedly work the same as standard wheelchair wheels. When shifted into low gear, they are said to be similar to a two-speed bicycle, making it twice as easy to push when climbing hills and ramps or when



In regular gear, Magic Wheels reportedly work the same as standard wheelchair wheels. But a surprise is in store when you shift into low gear!

rolling over uneven or rough terrain. Magic Wheels also have an automatic hill-holding feature, so users won't roll backward between pushes.

Contact: Magic Wheels Inc., 3837 13th Avenue West, Suite #104, Seattle, WA 98119. 866-624-4294 / 206-282-0760 (in Washington State) / 282-0765 (fax) / Info@magicwheels.com. ■

Note: PVA and PN do not endorse products and services.



ADVENTURE

LIVE YOUR LIFE THE WAY YOU WANT

X5 FRONTIER

The X5 Frontier is unlike any other mid-wheel drive power chair you will ever see. Not only is it perfect for the home with a turning radius of only 21.5", its outdoor capabilities far surpass the competition. Sand, snow, mud, and gravel prove no challenge for the Frontier. The precision handling combines our powerful mid-wheel drive system with state-of-the-art technology. With the X5 Frontier from Innovation In Motion, you really can go wherever you want.

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