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ALBANY - Behind a nondescript door on the Empire State Plaza Concourse lies hope for tens of thousands of people who have been dealt the cruelest of hands.

For those frozen by paralysis or riddled with tremors, speech or any communication can be impossible or incredibly time-consuming. A team at the state Health Department's Wadsworth Center Laboratories is developing a system to allow people to communicate via a skullcap that detects electrical currents emitted by the brain.

Scott Hamel is the lab's sharpest volunteer. On the day before Thanksgiving, he sat in his wheelchair and focused on a computer screen, slowly spelling words such as "food" and "help" by selecting letters - with his brain waves.

Hamel has devoted hundreds of hours to the project, with only minimal compensation, even though he has no need for the technology. The 44-year-old Averill Park man lost the use of his legs in an auto accident nearly 28 years ago, but his life is more than full: He is married, teaches vocational education and drives drag-racing cars as a hobby.

"There's a lot of satisfaction," he said of helping the Wadsworth team. "The information they're getting from me may be able to help someone out who is in a bad situation down the road."

After years of work, the team headed by Dr. Jonathan Wolpaw is getting close to developing a product for patients with brain injuries, advanced multiple sclerosis, strokes or amyotrophic lateral sclerosis, also known as Lou Gehrig's disease. Each can leave a person cognizant but with no speech and little muscular control.

Here's how the "brain-computer interface" works: Every time a person does any muscular task, the brain sends out tiny electrical impulses. Those signals are detected by a skullcap equipped to use technology similar to an electrencephalogram, or EEG. Wolpaw and his fellow researchers have developed software that finds patterns in these impulses, once thought to be random, and translates them into action on a computer screen. The goal is to move a cursor or click on an icon.

The trick for an individual is to be able to repeat the impulses consistently, so that the software reads them correctly. The promise for the severely disabled is that even when they can't move their muscles, their brains can still emit readable signals.

Hamel said that when he started using the computer, he would visualize a motion, like curling his toes or riding a

bike, to move the cursor. But as he has gotten better at it, the process is less conscious.

"I don't have to use the imagery now," he said. "I just do it. Like you do every time you move your hand."

Brain-computer interfaces are a thriving area for research. Wadsworth has lent its innovative software, called BCI2000, to dozens of labs across the country. Some use the skullcap, while others are testing devices implanted in the skull.

There's something of a war of words - and for funds - between the two camps. The implanted crowd thinks that its approach, which has been tried mostly on monkeys so far, will offer greater control.

Wolpaw said his lab's latest research stands up to its competitors, and he points out that implantable devices can cause infections or even damage.

The Wadsworth researchers are working on at least two approaches. Hamel can easily move an icon, dot or mouse point in two or three dimensions, to choose commands, surf the Web or spell out words.

The second approach is another spelling program that uses a technology called P300. It flashes columns and rows of letters in a format that looks like a search-a-word puzzle. When the desired letter is highlighted, the user has what is called an "oddball," or "a-ha!," response, which the skullcap and software detects.

Wolpaw's team is nearly ready to offer its system to people who need it. They recently got a boost - the 2005 Altran Foundation for Innovation Award - through which a European consortium will give Wadsworth 1 million euros worth of free consulting: advice from scientific and business professionals on how to build an interface for users and to market it to them.

The hardest part may be making the complex system work for everyone, regardless of their technical skills.

"To be any good," said Wolpaw, "this has to work without us standing there."

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TOMORROW ON `TODAY' The brain-computer interface work being done in Albany is scheduled to be featured Thursday on NBC's ``Today'' show as part of its focus this week on ``Modern Medical Miracles.'' Dr. Jonathan Wolpaw will appear on the program, from 7 to 10 a.m. on WNYT Ch. 13, but the exact time of his segment has not yet been determined.