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*The Disabilities Rights Center is dedicated to eliminating barriers to the full and equal enjoyment of civil and other legal rights for people with disabilities.*

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*The Institute on Disability advances policies and systems changes, promising practices, education and research that strengthen communities and ensure full access, equal opportunities, and participation for all persons.*

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*Dignity, full rights of citizenship, equal opportunity, and full participation for all New Hampshire citizens with developmental disabilities.*

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# RAP Sheet

The Latest in Disability Research, Advocacy, Policy, and Practice

Spring Issue 2005

## BETTER LIVING THROUGH ASSISTIVE TECHNOLOGY



### Coming Unwired Over Wireless Technology

Bob Williams, Director, Advancing Independence

*Welcome to the Spring Issue of the Rap Sheet and the amazing world of Assistive Technology. From simple modifications fashioned out of junk drawer contents to high tech talking computers, assistive technology enables individuals with disabilities to be more independent in their homes, at work, and in their communities. If you or someone you know is searching for an AT solution, we hope this issue will help you identify options, make connections, and find resources.*

In thinking about my own 40-something years, I've realized the technology that has had the most profound impact on my life is the original wireless hand held device: a transistor radio circa 1960. My late mom said she, my dad, and brothers and sisters first had a clear idea about what I was thinking by how I absorbed, kept beat with, and otherwise reacted to everything I heard on the radio. This, in turn, indelibly set in motion all the expectations, dreams, and schemes that my family and I collectively embraced as to what my life could and would be about.

Back then radio served much the same function in my life as the Internet does today. It afforded me with the most expansive, and by far the most accessible, gateway for exploring not just music and current events, but the entire world that existed outside my line of sight. Growing up, I drove my parents to distraction by making a practice of listening to the radio, the TV, and a recorded book all at the same time. I was among the first to master the fine art of multi-tasking. I think they realized even then how serendipitous it was for me to be able to tap whatever knowledge was within earshot.

Listening to the radio and watching TV are still the most effortless mediums through which I receive and process all sorts of information and stimuli. Indeed, both offer the only ways I can do this where my disabilities never enter into the equation. I think there are important analogs, lessons, and principles regarding the ubiquity of radio and TV that need to be applied elsewhere. But, clearly all technology should be as transparent.

We have all heard the cliché, "Anything you can do, I can do better." That's a benchmark we should be using to make certain that the wireless technology those without disabilities use is something that people with disabilities also can use, but to do a great many more things in far easier, more intuitive ways than we can imagine.

( Cover story continued )



The true power of my voice synthesizer lies in the sum and the integration of its parts. The "value added" of all forms of assistive technology increasingly rests with how well they integrate and interact with wireless solutions.

Before I learned to type, or at least hen peck, on an IBM electric typewriter when I was 6, my teacher doubted I would learn to read. Learning to type gave me a powerful tool to both disprove her doubts and connect with others. That one skill – typing – continues to enlarge the possibilities in my life. It has enabled me to move from using that first IBM, to a computer, to faxing and emailing people, and of course, to accessing the Internet.

I discovered the fax machine when I was part of a small group of folks in Washington, DC working to gain passage of the ADA. The fax enabled me to connect with, inform, and influence the thoughts and actions of hundreds of people outside my immediate range of sight; something I never fathomed would be within my reach.

1990 was a year filled with what seemed like boundless possibilities. It was the year that the ADA passed, the year the Berlin Wall fell, and the year that I began to use a Touch Talker, the first generation of the Pathfinder that I use now. Today, my Pathfinder has become my portal to the world. Eighty per cent of what I do personally and professionally, I am able to do because my Pathfinder affords me wireless access to my computer and thus the vast cyber space that lies just beyond my Microsoft desktop.

In August of 1993, two things occurred that significantly altered my life. President Clinton named me to head up the Administration on Developmental Disabilities and my very first day in that post I started to use email. And, while it's a toss up between the two, I believe that it is my

ability to use email and all its permutations that continues to have the most far reaching impact. Not even the ADA levels the playing field, makes it possible for me to feel like I'm able to do practically anything on a fairly equal basis as everyone else, and just makes my life fuller and easier, than having access to email and the Internet.

To help us peer through the looking glass, I'd like you to meet my imaginary friend Alice who is 5 years old and has the same needs, abilities, and potential as I had at her age. Here is the wide-eyed wireless world she lives in.

Alice loves to explore her neighborhood in her power wheelchair with her adoring German shepherd, Rex, free of her mother's watchful eye. Wireless geo tracking can nurture Alice's fierce independence in at least three ways. It can enable her mother to know right where she is. It can learn her traveling habits and guide her around narrow corners. If she ever gets lost or just plain tired of driving, Alice can shift her chariot into auto pilot for the trip home or to wherever she wants to go.

Alice is as inquisitive and chatty as any other precocious five year old. Wireless enables her to carry on voice and text messaging conversations with anyone, anytime, from anywhere. It lets her download everything from Harry Potter to the Britannia Encyclopedia, to the latest games and CDs. Her parents store all of her records on her PDA for easy retrieval whenever necessary. Wireless may never create a make believe Wonderland, but combined with assistive technologies, it can enable Alice to find her own accessible, highly successful path through school, college, employment, and into relationships of every kind. Alice can venture anywhere in this wide wireless world that her heart, mind, and fancy may take her.

( robert.williams@gmail.com )

## Assistive Technology Solutions in Minutes

Therese Willkomm, Ph.D., ATP, Executive Director ATECH Services

Growing up in a rural agricultural environment I learned the value of creative and immediate problem solving. If equipment breaks down, it needs to be fixed and right away. The work on a farm revolves around the weather; you have to take advantage of every dry day for fieldwork. If you wait until tomorrow it may rain and you'll get behind. A farmer's livelihood depends on the corn being "knee high by the Fourth of July." If the tractor breaks down, it needs to be fixed now or the corn won't be planted in time.

From an early age I appreciated the multiple uses of bailing wire and Duct® Tape. I was always amazed that my father could use the simple materials in and around our tool shed to fashion innovative solutions to everyday challenges. As an assistive technology provider, I've come to respect my father's straightforward approach to getting a job done. I have been increasingly frustrated with the lengthy process an individual must go through to acquire a piece of adaptive equipment. We can get bogged down in the paperwork when a simple solution may be right at hand.

Historically, the field of assistive technology operates under a traditional medical model. This means a person looking for help must complete paperwork, obtain a doctor's signature, secure authorization from insurance companies, and wade through other miscellaneous documents before an appointment can even be scheduled. Even then, there is no guarantee that a solution will be provided immediately. The medical model recommends, and often requires, an evaluation to determine the most appropriate solution. Then there is the development of a lengthy report and more insurance forms. Unfortunately, the individual is still waiting for a solution.

Instead of the medical model, I would recommend the "Just Do It" approach to getting the job done. Why spend a lot of time and money to purchase

a device that may or may not work for an individual? To learn what will or will not work, why not use creative problem solving to fabricate simple solutions or to make simple modifications for the individual. To be effective, assistive technology needs to meet the individual's unique physical, cognitive, and sensory abilities. Frequently, the right solution for the person is one-of-a-kind. Trial and error is often used until the right solution is found. If something doesn't work the first time, don't be discouraged. This is not a failure, but rather a necessary step to reaching a solution that works.

I am reminded of the newspaper reporter who suggested that Thomas Edison was wasting his time trying to develop a light bulb. The reporter said to Edison, (and I paraphrase), "Don't you know that man is supposed to light his way using an oil lantern?" The reporter ridiculed Edison for developing hundreds of prototypes that never worked. Edison's reply (also paraphrased), "Young man, you don't understand, I am now hundreds of steps closer to developing the light bulb." Edison's persistence applies to the search for the right assistive technology. It's worth following the old maxims: "You have to start somewhere," "You'll never know unless you try," and "It is better to try something that you think might work, than to do nothing at all."

I am a proponent of creative problem solving as a practical way to produce good outcomes for individuals in a timely and cost effective manner. If you would like to know more about low cost solutions that can be constructed in five minutes or less, please check out my new book, *Assistive Technology Solutions in Minutes*. The proceeds of this book go to support the purchase of assistive technology devices and equipment available through ATECH Service's Technology Exploration Center.

## Assistive Technology in the Schools

Cate Weir, ATECH Services' Project Coordinator for NH Vision/Hearing Network

Home to ATECH Services' Technology Exploration Center, The second floor of the Dolloff Building on the grounds of the old State Hospital is a busy place. Students, their teachers, and parents come to the Center to explore computer hardware and software and other assistive technology (AT) that can help them to meet their learning objectives and participate more fully in their schools. For some students, this means finding a head pointer, specialized key board or other alternative ways to use a computer. Center staff works with other students to create individualized solutions to help them in a science lab or on a job. Teachers come to learn how to create multi-media books that promote literacy for all their students. Assistive technology opens doors, supports learning, and increases independence AND the law requires that assistive technology be considered for all special education students (20 U.S.C. 1414(d)(3)).

Increasing access to AT devices and services enables special education students to compete, collaborate, and interact with their non-disabled peers. While it is not a cure or a magic bullet, assistive technology levels the playing field and helps remove barriers associated with the student's disability. The following examples show how AT helps students to be more fully included in their schools.

▶ An eighth grader living in rural New Hampshire who has a cochlear implant uses remote Cprint, a computer-based note taking system, to provide real time notes of what is being said in class. The captionist typing the notes is off site and connected to the classroom through a telephone.

▶ A very bright fifth grade boy with autism is an avid and advanced reader, but struggled with writing. Embarrassed that an aide took notes and wrote his papers, he compensated by acting out in class. After learning how to use Dragon Naturally Speaking, a speech to text software program, this student is able to work independently. He tells his computer what he wants to write and the computer types it for him. His classmates are impressed and think that Dragon Naturally Speaking is definitely cool. No longer embarrassed, his "behavior problems" have disappeared.

▶ The teachers for a high school student, who used Braille to take class notes, often wondered how much he was getting out of his classes. Now that he uses Braille Note, a compact note taking system that includes a built-in modem, e-mail package, and Braille cell technology, he prints out his notes and leaves them for the teacher to review. His teachers are able to assess his grasp of the material and provide clarification when needed. With this new technology and teacher support, the student is making tremendous academic strides. (The Braille Note also features a calendar and scheduler, address list manager, and scientific calculator.)

Assistive technology can free students with disabilities from dependence on others and provide greater access to learning. Parents or teachers can request an evaluation to determine if a student can benefit from assistive technology. Students needing assistive technology should have IEP goals and objectives that integrate assistive technology into all aspects of their educational program. It also is critical that the student, their teachers, and family members all receive appropriate training to ensure that the student is able to take full advantage of the technology. For many students assistive technology is an invaluable resource for promoting inclusion and helping them to realize their full potential.



An assistive technology device ... is any item, piece of equipment or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of individuals with disabilities. An assistive technology service...is any service that directly assists an individual with a disability in the selection, acquisition, or use of an assistive technology device. Such term includes the evaluation of the needs of an individual with a disability, including a functional evaluation of the individual in the individual's customary environment.

*Assistive Technology Act of 2004*

Each Local Education Agency (LEA) shall ensure that assistive technology devices or assistive technology services, or both, are made available to a child with a disability if required as part of the child's special education, related services or supplementary aids, and services stated in the child's Individual Education Plan (IEP).

*NH Rules for the Education of Children with Disabilities, 2002*



*(Marika Steir using her Dynavox.)*

## Funding Technology Solutions

James Fox, J.D., Disabilities Rights Center

With the rapid advancement of technology, there has been an explosion in the number of technology-based solutions that can be used by individuals with disabilities to improve their quality of life. To ensure that they have access to needed technology, individuals with disabilities should be knowledgeable about how Assistive Technology (AT) can be funded. There are six major funding sources: (1) the Individuals with Disabilities Education Act (IDEA), (2) Medicaid, (3) Medicare, (4) Vocational Rehabilitation (VR), (5) Social Security's Plan for Achieving Self Support (PASS) program, and (6) private insurance.

The IDEA's provisions apply to students who need special education and related services because of a disability. The IDEA defines the term education broadly as specially designed instruction that is needed to meet the unique needs of a child with a disability. Technology is provided for in the IDEA and is defined broadly as any item, product, or service that increases the functional capabilities of a child. The IDEA can be utilized to obtain technology to assist in educational goals, including the goal of transition from school to work. To the extent that a student is not covered by special education, Section 504 of the Rehabilitation Act of 1973 is available to ensure full access to a school and its services.

Medicaid, a joint state-federal program that provides low-income recipients with health care benefits, is another valuable source of funding. Medicaid is a vendor payment program that reimburses providers for covered supplies and services on behalf of participants. Technology typically falls into the category of durable medical equipment under Medicaid's home health care provisions. Children under the age of twenty-one can obtain technology under the Early and Periodic Screening, Diagnosis, and Treatment provisions of Medicaid. For Medicaid to pay for technology, it must be considered medically necessary.

For those receiving Social Security Disability Insurance (SSDI), technology is covered by Medicare. Assistive technology, which is medically necessary, generally may be obtained through Medicare as durable medical equipment (DME). Medicare defines DME as equipment that:

- ▶ Can withstand repeated use;
- ▶ Is primarily and customarily used to serve a medical purpose;
- ▶ Generally is not useful to a person in the absence of an illness or injury; and
- ▶ As appropriate for use in the home.

Medicare covers only 80% of the cost of DME, at its own approved rate. If an individual is eligible, Medicaid can cover the 20% co-payment. Medicare's rates are sometimes less than what vendors charge; the consumer is responsible for any shortfall in funding. Medicare also may decline coverage if: (1) cost is disproportionate to the therapeutic benefit; (2) a less expensive appropriate alternative exists; or (3) an alternative already is available.

The New Hampshire Department of Education provides Vocational Rehabilitation services to "eligible individuals" seeking employment. Eligibility is presumed if a person with a disability: (1) has a physical or mental impairment that is an impediment to employment; (2) can benefit from VR in terms of employment; (3) requires VR services to get or keep gainful employment; (4) qualifies for or receives SSI and/or SSDI benefits; or (5) is a student in transition from school to work. Eligibility also is presumed when a VR Counselor determines that a person with a disability wants or needs VR services. Consumers of VR services help develop, with their VR counselor, a written Individualized Plan for Employment (IPE) that lists the specific services to be provided to reach an employment goal. Technology needed for employment should be included in the IPE.

Social Security's PASS program is an employment-based program designed to increase the self-sufficiency of individuals with disabilities. To be eligible, an individual must: (1) have a disability; (2) meet SSI's eligibility requirements with the exception of the income/resources test; and (3) have either earnings, unearned income, or resources to set aside. The PASS must contain a feasible occupational objective and the individual must be capable of pursuing the objective. Attaining an occupational objective often involves the acquisition of technology. The PASS program can be an effective vehicle for obtaining funding for technology.

Some private health insurance policies provide technology-based solutions as coverage for durable medical equipment based upon medical necessity. Policies that provide such coverage typically limit its scope through the use of monetary caps, co-payment requirements, and exclusion of certain items. It is important to closely examine the policy language to determine the scope of coverage, as ambiguities about coverage will be decided against an insurer only if there is reasonable interpretation that coverage is provided.

## Did I Miss That SOUND?

Joan Marcoux, Hearing and Vision Program Specialist, NH Division of Adult and Elderly Services

Have you ever had a friend knocking at your door for over an hour trying to get your attention? If you are unable to hear a knock or the doorbell, a signaler such as strobe light or flashing lamp can visually alert you that someone is there.

Did you miss that important phone call because you were watching TV? I've waited hours for friends to call, only later to find their messages on my voice mail because I hadn't heard the phone. I now use a flashing strobe light to alert me to incoming calls.

Binoculars for the ears? Yes, indeed! They are called assistive listening devices. Some are operated via a FM system that uses radio waves, others employ an infra-red system; both methods enhance sound. Using a volume control, an individual with a hearing loss can increase the volume of his or her receiver to the desired comfort level, while the speaker on the other end uses a transmitter to communicate.

Assistive listening devices can be used in one-to-one situations, in classrooms, churches, theatres, restaurants, and in the car. Individuals can use receivers on headsets or neckloops. Since I use hearing aids with T-coils, my receiver is on a neckloop. With the T-coil switch I can block out background noise and benefit from the amplification in my own hearing aids. This is more comfortable for me than using a headset on top of my hearing aids.

Have you ever overslept and missed an important appointment? Well, bed shakers and flashing lights can help ensure that this will never happen again. Some units have a combination of a flashing light and shakers. To make sure I wake up on time I use what I call my tri-sensory modality. My unit has a shaker, flashing light, and a ringer. If you'd like more information on these and other technological aides, please contact me. I can be reached by email at [jmarcoux@dhhs.state.nh.us](mailto:jmarcoux@dhhs.state.nh.us) or by telephone at 1-800-351-1888 or at Relay NH: 1-800-735-2964.

"Never before  
in history has  
innovation  
offered promise  
of so much to  
so many in so  
short a time."  
Bill Gates

## A Playground for All

Phil Rowley, Director Laconia Recreation Department

In December 2003, the city of Laconia officially opened the Tardif Park All-Accessible Playground. The ribbon cutting ceremony was the culmination of a year and half collaborative effort by the Partners in Health/Community Health and Hospice, Laconia Recreation Department, and the Tardif Park Association. The Advisory Committee for Partners in Health initially approached Laconia's Recreation Department to expand recreational opportunities for the children served by their programs. The Department and Advisory Committee agreed to work together on an accessible playground for the city. Once Tardif Park was identified as the ideal location for this project, volunteers from the Tardif Park Association were brought into the planning process.

The group was committed to ensuring that individuals of all abilities would have full access to the playground and all of its equipment. The planning group reviewed playground designs, checked out equipment, and talked with playground manufacturing representatives. With the city providing core funding for the playground, the group applied for and received several grants, including \$44,000 from the National Park Services' Land, Water, and Conservation Fund. Donations were found for excavation, site work, and landscaping.

The response to the playground has far exceeded community expectations. With one of the few accessible playgrounds in New Hampshire, Tardif Park has become a popular destination for children and families from all over the state. In the year since the playground has been opened, the usage of Tardif Park has dramatically increased. Whatever their abilities, the playground is a place where children can explore, challenge themselves physically, and make friends. The project has been so successful that Laconia is in the preliminary stages of planning another accessible playground for the city's park system.

## THE LEGAL SIDE OF ASSISTIVE TECHNOLOGY

Cindy Robertson, Esq., Disability Rights Center

Question: What do these things have in common?

- ▶ A light switch
- ▶ A coupon organizer
- ▶ A speaker phone
- ▶ A timer
- ▶ Voice activated software for a computer
- ▶ A wristwatch that beeps
- ▶ A Palm Pilot
- ▶ An ergonomic chair

Answer: They are all technological devices that can help a person get something done at home, school, work, or play. Assistive technology (AT) enables millions of Americans to meet the challenges of living with a disability. The legal term "assistive technology device" means "any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities." AT can make it possible for a person to participate in an education or training program. AT can make it possible to get ready in the morning and to take care of personal needs. AT can make travel to and from school or work possible. AT can make a tremendous difference in the ability of a person to work, even when that individual has a severe disability.

### THE TECH ACT

Federal funding provided under the Assistive Technology Act of 1998 helped states establish systems that enabled individuals with disabilities to access assistive technology. With help from the Tech Act states were able to develop the infrastructure necessary to administer AT resources. With these systems now in place, the federal program has shifted its focus to directly helping individuals with disabilities who can benefit from AT.

On October 26, 2004, President Bush signed legislation to expand access to technology for individuals with disabilities. The Assistive Technology Act of 2004, co-authored by our own Senator Judd Gregg, promised to make AT more available

to people who need it. The Act requires states to spend the majority of their AT resources on direct services for individuals with disabilities and encourages states to invest in those programs that have been most effective in providing AT devices. Additionally, the bill demanded greater accountability by requiring states to submit AT grant applications with detailed descriptions of planned activities and measurable goals relating to education, employment, telecommunication or information technology, and community living. There is also a requirement that the effectiveness of these programs be evaluated on a continual basis.

#### The Future of the Tech Act is at Risk

Millions of people with disabilities rely on assistive technology to help them gain and maintain independence unfortunately, President Bush's FY 2006 Budget proposes the elimination of funds for the newly reauthorized AT Act of 2004. The cut in federal dollars was proposed in spite of unanimous bi-partisan Congressional support in reauthorizing the Act and evidence that these programs have benefited communities, the economy, businesses, and people with disabilities. Not funding the Tech Act will result in a severe loss of AT services in New Hampshire and across the nation. A number of groups including the Association of Assistive Technology Act Programs (ATAP), disability organizations, advocates, technology companies, public-private sector interests, and other stakeholders are working to ensure that Tech Act funds are restored to the budget. You can help in this effort by writing or calling your United States Representative and Senators and asking them to support funding for the Tech Act.

More information about AT can be found on the DRC website: [www.drcnh.org](http://www.drcnh.org) (search for Assistive Technology).

In a few hundred years, when the history of our time will be written from a long-term perspective, it is likely that the most important event historians will see is not technology, not the Internet, not e-commerce. It is an unprecedented change in the human condition. For the first time - literally - substantial and rapidly growing numbers of people have choices. For the first time, they will have to manage themselves. And society is totally unprepared for it.  
--Peter F. Drucker,

## In Business at The Readery

Julia Freeman-Woolpert, Disabilities Rights Center

There's nothing I like better than a bookstore, especially one that invites you to browse, have a friendly conversation, and sit a spell with a good book. That's what I found in downtown Plymouth when I went to meet Brint Woodward who works at The Readery. In business since 2001, the Readery trades and sells "previously owned" books at bargain prices.

Brint who smiled when he told me, "I like meeting people," is attracting customers from all over New Hampshire. When you visit the bookstore Brint is ready to chat about books, music, hydroelectric dams, vacation destinations, neologisms, and all sorts of interesting things. Talking with Brint is definitely one of the things that makes going to The Readery so fun.

Once you've decided on a book Brint rings up your purchase, accepts your money, and makes change. Not terribly remarkable, except that for years professionals told Brint's mother, Patsy Kendall, that her son who is blind and has autism would never be able to read or write, let alone run a business. His family was even told that it would be best to place Brint in an institution and forget about him.

Fortunately, Patsy and Brint found family members, friends, and creative service workers who helped Brint dream big dreams. Because of his developmental disability Brint receives assistance from Lakes Region Community Services Council (LRCSC). When a used bookstore went on the market, the Council saw an opportunity and purchased the business. The agency helped Brint and two friends with the start up, and provides much of the support they need to be successful. The Council is in the process of turning ownership over to Brint and his co-workers.

To do his job Brint relies on assistive technology. When you walk in The Readery a bell rings letting Brint know he has a customer. If you're a regular, Brint will recognize your voice and greet you by name. Brint totals up your

purchases with a talking calculator and runs the bills through a scanner that tells him the amount of the currency. Brint uses another talking scanner to read written material, and JAWS, a talking computer software program, reads email, web pages, and other computer documents. Brint also uses JAWS to manage customer accounts and log inventory.

Brint and his co-owners share responsibilities for running the store. Brint has good people skills and is a great front-end person and marketer. He represents the business at Chamber of Commerce meetings and has given several power point presentations about The Readery, including one at the Governor's Conference for Entrepreneurs. His co-owners are good at shelving and locating books, jobs that are difficult for Brint even with his assistive devices. A support worker from LRCSC helps with the business and assists Brint. She's especially helpful when his technology breaks down which, unfortunately, happens too frequently.

In fact, technology breakdowns seem to be one of the more disabling and certainly the most frustrating of Brint's "conditions." At present he is between computers – the old one is not working properly, and the new one hasn't been completely configured yet. Without properly working tools, Brint is much more dependent on others. The day "seems like a long time," says Brint, when he isn't able to fully do his job.

The next time you're in Plymouth, treat yourself to a trip to the Readery at 67 Main Street across from the Common. Ask Brint about his assistive gadgets, he'd love to show them to you. Take time to browse; you'll walk away with a good book or two and maybe a new friend.



## Aging In Place: Assistive Technology Can Help

Linda Bimbo, Project Coordinator, Institute on Disability

With a rapidly aging population, addressing the long-term care needs of older Americans is one of our country's biggest challenges. In 1985, there were approximately 5.5 million functionally disabled elders living in the community and an additional 1.3 million residing in nursing homes. By the year 2020, these figures are projected to nearly double to 10.1 million and 2.5 million respectively. Older Americans, whether impaired or not, prefer to live independently in their own homes for as long as possible. Assistive technology can play an important role in helping elders to "age in place."

Most frail elderly rely on other people to help them with daily activities such as preparing meals, bathing, dressing, and grooming. Care from spouses or other family members, friends, or paid caregivers, is often what makes the difference between an individual living at home and needing to move to a more restrictive setting. Due to the growing numbers of elders and people with disabilities who need support in order to remain in their homes, and the shrinking pool of direct service workers, finding enough people who can provide needed care is difficult. Better use of assistive technology is being explored as a way to enhance independence and supplement hands-on care.

According to the US Office of Technology Assessment, in 1985 there were over 18,000 devices to aid the functionally impaired elderly. With technological advances, the number of assistive devices continues to increase. While these devices include sophisticated computerized systems, most assistive technology is neither complicated nor expensive. Many assistive devices were not originally designed for people with disabilities, but rather were put on the market for the general public. For example, a sound or movement sensitive light switch, while not created with older consumers in mind, makes life much easier for elders with arthritis or mobility problems.

There are assistive devices for every room in the house. In the kitchen, eating and cooking utensils can be fitted with oversized handles for easier gripping enabling an 85 year old with arthritic fingers and hands to continue to prepare meals. Grab bars can be easily installed in the bathroom. Simple items such as shower benches and bathtub lifts not only alleviate some need for hands on help, but make showering easier and reduce the risk of slips and falls. (An injury from a fall is frequently the reason an older person moves into a nursing home.) In the bedroom, ceiling poles around the bed and/or bed rails can make it easier to get in and out of bed.

Will assistive devices be able to replace human assistance? With significant advances in technology, the answer to this question in some cases is yes. However, for most people, assistive devices supplement the support provided by a caregiver. How much

help assistive technology can provide depends on the circumstances and needs of the individual.

Despite the availability of thousands of devices, assistive technology has not been fully utilized. Experts attribute this to four factors: 1) inadequate training and orientation for the older consumer; 2) an inappropriate match of the assistive device to the individual's need; 3) unwieldy designs, and 4) failure to provide elders with the support they need to incorporate assistive technology into their lives. Family members and paid caregivers need to work closely with the individual to ensure that any recommended assistive technology not only is able to address a specific need, but that the individual is well trained and comfortable in using it. For elders, simpler assistive devices are often the most beneficial. When used effectively, assistive technology can be a critical factor in maintaining independence and can make an enormous difference in the quality of an individual's life.

## Assistive Technology for Individuals with Vision Loss

Rose Prescott, Coordinator of Sight Services for Independent Living

Assistive technology (AT) can help individuals of all ages to meet the daily challenges of dealing with vision loss. The following basic rehabilitation concepts and assistive devices can help individuals with vision loss to remain independent on the job and at home.

- Effective use of lighting
- Use of contrast
- Magnification
- Large print
- Talking or audio items
- Organizing and labeling

I would like to share the story of a visually impaired woman living in rural New Hampshire who manages her diabetes independently with the help of assistive technology. With training she has learned to use a talking glucometer to check her blood sugar levels, a talking blood pressure monitor, a talking thermometer to take her daily temperature, and a talking scale to help maintain her weight. To ensure that she is taking the right medications, she uses a hand held magnifier to read the print on her prescription bottles. Labeling and organizing medication is important for everyone, but especially for individuals with chronic health conditions. In addition to magnified print, prescription labels can be in Braille or audio. Some people with vision loss use raised dots, Velcro strips, or color coding to keep their medicines organized.

Simple AT also helps this woman with food preparation and safety in her kitchen. Long oven mitts protect her hands and arms when taking food out of the oven. She uses a variety of marking materials to label and organize items in her cupboards and refrigerator. Velcro cut in small strips marks knobs for the stove burners and the oven. Puffed or fabric paint, raised, textured, or colored dots also are effective for marking thermostats, microwaves, washers, dryers, and other appliances.

Also useful in the kitchen is a liquid level indicator (commonly known as a Say When) that is hooked on the side of a cup and beeps when the cup is full. Contrast can be helpful in cooking; measuring is easier if you use a white cup for dark liquids or a dark cup for light liquids. A cutting board with black on one side and white on the other provides contrast when chopping fruits, vegetables, or other food. Large print and Braille timers are available and talking watches and clocks can help keep track of time.

Magnification and correct lighting are important tools for individuals with low vision. There are many types of magnifiers available: handheld, stand mounted, lighted, and electronic. A gooseneck lamp strategically placed can improve a person's ability to read and do other tasks. Some people find glare a problem and wear wrap around sunglasses both inside and outside. An individual assessment will help determine what strategies and devices are needed to address low vision issues.

In addition to helping people with vision loss function more independently at home, assistive technology offers critical support in the work place. Computers

are available with large print software and can be equipped with audio screen readers to read email and text. A closed circuit television camera can be used to magnify mail and other hard copy materials. Assistive technology is broadening the scope of employment opportunities for individuals who have vision loss.

Sight Services for Independent Living (SSIL) is a statewide federally funded program providing free services and assistive devices to individuals over 55 who have vision loss. To receive services you will need to provide basic information and an evaluation from your eye doctor. A trained low vision specialist will conduct a screening to determine what type of magnification is appropriate for you and identify strategies to address issues around lighting, glare, and contrast.

SSIL also sponsors peer support groups throughout the state; these groups meet at senior centers, senior housing facilities, or libraries. Each group plans their own programs; SSIL staff or other speakers are invited to address topics such as increasing independence, nutrition, exercise, or how avoid being a victim of a scam.

*Sight Services for Independent Living can be reached by calling:*

1-800-581-6881.

Our office is located at:

21 South Fruit Street

Suite 20

Concord NH 03301

Rose Prescott is the coordinator

Cheryl Johnston is the program assistant

Email: Rprescott@ed.state.nh.us

## How Assistive Technology Saved My Job

Bev. Brahmstedt, Disabilities Rights Center

Imagine yourself standing in the parking lot in front of a very large building. To get to work you need to walk to the front door. The problem ... you can't walk that far. What will you do?

This was the predicament I found myself in. Due to health issues, my legs are just not working like they used to. I was faced with the frightening prospect of not being able to do my job because I couldn't walk to the door, get to meetings, or even walk to my desk.



REM Volunteer technician Phil Dresser refurbishes a wheelchair.

I talked to my former employer, but we could not come up with a workable accommodation. I already had the closest parking space and the purchase of a wheelchair or scooter was not covered by my insurance policy. I looked into buying a scooter myself, but the prices were way out of my budget.

Then a friend told me about REM– Refurbished Equipment Marketplace.

REM repairs, refurbishes, and distributes assistive technology. When I went to visit REM I found a truly remarkable place. They had everything - walkers, wheelchairs, and an old Rascal Scooter that was perfect for me and at a price I could afford. The scooter fit in the trunk of my car and is easily recharged using an extension cord plugged into an outside outlet.

The next day I took my scooter to work. I didn't stand at the door feeling overwhelmed. I had my best day at work in a very long time.

Since that day my scooter and I have been inseparable. I use my scooter to go everywhere; it takes me shopping, to movies, concerts, and football games.

Without the wonderful people at REM and the service that they provide I probably would be homebound and most likely unemployed. Thanks REM you're the best.

# Assistive Technology Resources

## ► What's New in Used Assistive Technology?

Making a good Idea Better! The Refurbished Equipment Marketplace is making it easier to access high quality used equipment.

Here's How To –

Donate Equipment - You can make a tax-deductible donation of equipment with free pick up service.

Find Equipment - The REM maintains a database of hundreds of pieces of equipment all refurbished by a certified technician.

Buy equipment - The REM prices are 25-50% of retail, depending on age and condition.

Sell equipment - The REM can help you sell your equipment or you can list it yourself on "Equipment Classifieds."

Trade equipment - The REM extends a "donor's discount" to anyone who also purchases equipment.

Rent equipment - The REM rents everything except bath products and lift chairs.

Repair equipment - The REM's trained technician can service/repair major manufactures equipment once the factory warranty has expired.

For more details Call the REM toll free at (800) 427-3338 or click [www.atinnh.org](http://www.atinnh.org)

## IN STATE RESOURCES

A TECH Services, an Alliance for Assistive Technology, Education, and Community  
<http://www.nhassistivetechology.org/>

### NH-ATECH

67 Communications Drive  
Laconia, NH 03246  
Toll-free Phone: (800) 932-5837  
Phone: (603) 528-3060 (v/tty)  
Fax: (603) 524-0702

### Refurbished Equipment Marketplace

84A Iron Works Road  
Concord, NH 03301  
Toll-free Phone: (800) 427-3338  
Phone: (603) 224-7630  
Fax: (603) 224-6063

### Technology Exploration Center

117 Pleasant Street  
Dolloff Building  
Concord, NH 03301  
Phone: (603) 226-2900  
Fax: (603) 226-2907

### NH Vision/Hearing Network

117 Pleasant Street  
Dolloff Building  
Concord, NH 03301  
Phone: (603) 226-2900  
Fax: (603) 226-2907

### Northeast Deaf and Hard of Hearing Services

125 Airport Road, Concord, NH 03301  
Voice (800) 492-0407 or (603) 224-1850  
TTY (866) 634-4764 or (603) 224-0691  
Fax: (603) 225-4346

*New Hampshire's 'one-stop' for services to the Deaf and Hard of Hearing community and for information about hearing loss.*

## OUT OF STATE RESOURCES

### Adaptive Environments: Human Centered Design

374 Congress Street, Suite 301  
Boston, MA 02210  
Phone: (617) 695-1225 (v/tty) Fax: (617) 482-8099  
Email: [info@AdaptiveEnvironments.org](mailto:info@AdaptiveEnvironments.org)  
<http://www.adaptiveenvironments.org>

*Advancing the role of design in expanding opportunity and enhancing experience for people of all ages and abilities*

Family Center on Technology and Disability  
Academy for Educational Development (AED)  
1825 Connecticut Avenue, NW 7th Floor  
Washington, DC 20009-5721  
Phone: (202) 884-8068 fax: (202) 884-8441  
Email: [fctd@aed.org](mailto:fctd@aed.org)  
<http://www.fctd.info>

INFORMATION TECHNOLOGY TECHNICAL ASSISTANCE  
AND TRAINING CENTER

Center for Assistive Technology and Environmental  
Access  
Georgia Institute of Technology  
490 10th Street NW · Atlanta, GA 30318  
Phone: (866) 948-8282 (v/TTY)  
Fax: (404) 894-9320  
Email: [ittatc@ittatc.org](mailto:ittatc@ittatc.org)  
<http://www.ittatc.org/>  
*Promoting accessibility through training and assistance*

ON THE NET

AbleData,  
<http://www.abledata.com/>  
*Database contains information on more than 20,000 assistive  
technology products, from white canes to voice output programs,  
including price and company information.*

AccessIT: National Center on Accessible Information  
Technology in Education, at the University of  
Washington  
<http://www.washington.edu/accessit/index.php>  
*Promotes the use of electronic and information technology for  
students and employees with disabilities in educational institutions  
at all academic levels*

The Alliance for Technology Access  
<http://www.ataccess.org/>

Assistive Tech  
<http://www.assistivetech.net/>  
*Database to help find assistive technology solutions, determine  
costs, and link to vendors.*

AT Network  
<http://www.atnet.org/>

The Center for Universal Design at NC State  
University  
<http://www.design.ncsu.edu/cud/>

Closing the Gap: Computer Technology in Special  
Education and Rehabilitation <http://www.closingthe-gap.com/index.lasso>  
*Practical information on assistive technology products, procedures,  
and best practices*

Dynamic Living

<http://www.dynamic-living.com/>  
*This site helps locate commercially available assistive technology  
solutions*

Family Center on Disability and Technology  
<http://www.fctd.info/>

Fast Facts for Funding Assistive Technology - Temple  
University's Institute on Disabilities  
<http://www.disabilities.temple.edu/publications/assistive/FF.htm>

Funding of Assistive Technology to Make Work A  
Reality, by James Sheldon, Esq. and Ronald Hager,  
Esq., Neighborhood Legal Services, Sept 2004  
<http://www.nls.org/Work%20&%20AT.htm>

Job Accommodation Network  
<http://www.janweb.icdi.wvu.edu/> or call 1-800-JAN-  
PCEH  
*Website includes resources for assistive technology solutions in  
the work place.*

The National AgrAbility Project  
<http://www.agrabilityproject.org>  
*Website contains an assistive technology database related to  
agricultural work, database includes assistive technology publications  
that can be downloaded.*

New England ADA and Accessible IT Center  
<http://www.NewEnglandADA.org/>

New England Assistive Technology Exchange  
<http://www.mv.com/ipusers/nhaat/neat/>  
*A listing of equipment for sale, loan, and exchange*

New Hampshire Assistive Technology Partnership  
Project at the Institute on Disability  
[http://www.iod.unh.edu/projects/technology\\_policy.html](http://www.iod.unh.edu/projects/technology_policy.html)

The Public School's Special Education System as an  
Assistive Technology Funding Source: The Cutting  
Edge, by Ronald Hager, Esq. Neighborhood Legal  
Services  
<http://www.nls.org/specedat.htm>

RESNA: Rehabilitation Engineering and Assistive  
Technology Society of America  
<http://www.resna.org/>  
*Promoting research, development, education, advocacy, and  
provision of technology*

Tech Connections  
<http://www.techconnections.org>  
*An information and dissemination project to assist Vocational  
Rehabilitation agencies and others with applications of assistive  
technology.*



## **SOLUTIONS FOR EASIER LIVING: Hands on Exploration of Assistive Technology**

preventing slips and falls.... getting up, into, out of, and through.....one handed solutions.....back saving solutions....hearing, vision, and memory aids.... solutions for arthritis.....on site problem solving and fabrication.....wheelchair maintenance and repair clinic....toy adaptations (bring your toys!)....and more!

OFFERED AT THESE THREE LOCATIONS:

### **S P R I N G 2 0 0 5**

**Peterborough April 23d, 2005 (10:00am - 3:00pm)**

Host: Family and Community Resource Center  
46 Concord Street, Peterborough, NH 03458, (603) 924-2159

**Littleton May 14th, 2005 (10:00am - 3:00pm)**

Host: Littleton High School and TechLink NH  
105 School St., Littleton NH 03561, (603) 444-5601

**Concord May 21st, 2005 (10:00am - 3:00pm)**

Host: Centennial Senior Center  
37 Regional Drive, Concord, NH 03301, (603) 228-6630

*For more information contact Sonke Dornblut at 603-862-4320.*

*Sponsored by:* NH Assistive Technology Partnership  
University of New Hampshire, Institute on Disability/UCED

*This publication is available in alternative formats.*

**NH**

Littleton

Concord

Peterborough

