



Occupational Therapy "Macgyver" Makes Life Easier With Speedy Tools

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DURHAM, N.H. -- University of New Hampshire faculty member Therese Willkomm calls herself "MacGyvette." But Willkomm doesn't fight crime like the resourceful 1980s television sleuth; rather, she fashions tools from everyday objects that make life easier for people with disabilities.

Willkomm, clinical assistant professor of occupational therapy and director of ATinNH at the Institute on Disability at UNH, is a specialist in assistive technology, which she describes as "solutions for easier living, learning, working, and playing." And while the users of her solutions have some form of disability – from an aching back to extensive paralysis – Willkomm's work rarely deals with expensive wheelchairs, specialized computers or complex communication systems. "Eighty percent of assistive technology costs \$100 or less," she says.

Willkomm's assistive technology solutions employ custom items she "MacGyvers" from inexpensive, ordinary items such as Plexiglas, PVC, and assorted tapes as well as off-the-shelf products like wheeled carts, easy-grip tools or two-way radios. And like MacGyver, Willkomm is speedy and resourceful – her trademark is creating solutions in five minutes or less with inexpensive, readily available materials.

"One of the things I've struggled with is how long people have to wait for a solution," says Willkomm. "Often times, people are literally dying while they wait. What I'm trying to do is a whole paradigm shift. What can we do today that can make a difference?"

Willkomm shares her creativity in a book, "Assistive Technology Solutions in Minutes: Make a Difference Today!" that helps her students and others find and make quick, easy solutions. Another recent publication, "Solutions for Easier Living Located in Your Neighborhood," highlights solutions found in most hardware, office supply, or discount department stores.

Among her favorite assistive technology solutions:

- Using a plastic flagpole holder, epoxy putty, and Pam cooking spray, Willkomm mounted a camera onto a wheelchair, giving the user – a school-aged boy – a new way to connect with his classmates. "Cameras are great for kids who have a hard time communicating," she says. "I'm always blown away by what they take pictures of."

- To help an 18-year-old with a brain injury that affected his ability to remember daily hygiene sequences, Willkomm created a rap CD (played in a shower-mounted CD player) that cued each showering activity, from "turn on the water" to "put the soap on the puff" to "rinse off the soap."
- For a dairy farmer with a high-level spinal cord injury, she rigged a two-way radio with a large spring-loaded Plexiglas button so he could call his wife if she was in the field. She mounted it next to his wheelchair; a rubber bumper inside the plastic holder let him activate the call button on the radio with very little head or hand movements.

Willkomm has a special affinity for the dairy farmer; she credits her "make it in minutes" approach to growing up on a dairy farm in Wisconsin. "You're taught how to fix things fast – if the cows get out, you've got to fix that gate now," she says. She honed her craft at the University of Pittsburgh, where she received a Ph.D. in rehabilitation science and technology and wrote her doctoral dissertation on ergonomic risk factors and tractor modifications for farmers with spinal cord injuries.

After working in the field for 25 years and serving as an adjunct professor at UNH for eight of them, she joined the UNH faculty in the fall of 2005. She holds a joint appointment to the occupational therapy department and the Institute on Disability as the director of New Hampshire's statewide assistive technology program.

An aging population and changing health care make Willkomm's assistive technology solutions more relevant than ever. She cites a World Health Organization statistic that says the number of people with disabilities will continue to rise, but the money to support them remains level. "That means we've got to be creative," she says. "We need to empower the people most influential in the lives of people with disabilities: the family members, the teacher aides, and job coaches."

At UNH, Willkomm empowers the next generation of occupational therapists. In the course Introduction to Assistive Technology, she challenges her students to make an on-off switch with nothing more than a business card, some foil tape, and speaker wire. Every student receives a copy of her book and a tool kit that MacGyver would envy, complete with a miniature blow torch and other fabrication tools, epoxy putty, several pieces of acrylic, speaker wire, and specialty tape. "Am I trying to turn all my students into MacGyvers? No," she says. "But I'm teaching them creative problem solving."

Willkomm's books "Assistive Technology Solutions in Minutes" or "Solutions for Easier Living Located in Your Neighborhood" are available through the Institute on Disability at UNH: <http://iodserver.unh.edu/iodbookstore/>.