



The Occupational Therapy program at Colorado State University has been designated a Program of Excellence by the Colorado Commission on Higher Education, named a Program of Research and Scholarly Excellence by the University, and ranked among the Top 10 occupational therapy programs in the nation by *U.S. News & World Report*, which ranked it number seven in 2004.

What is Occupational Therapy, and how does it change lives for the better?

by Rahaf Kalaaji

The aim is simple: to help people live as independently as possible.

“It really is about changing people’s lives,” says Jodie Hanzlik, head of Colorado State’s Department of Occupational Therapy.

Occupational therapy helps people of all ages address challenges that impair their ability to perform daily life tasks. Those challenges can be physical, developmental, emotional, or cognitive related to a traumatic brain injury or a stroke.

The success of Colorado State’s world-renowned Occupational Therapy program is based on three factors: teaching, research, and outreach, all critical hallmarks of the land-grant heritage and mission that define Colorado State. The depart-

ment combines innovative teaching with cutting-edge research and invaluable service to an often neglected segment of the population. Its impact travels beyond the four walls of the historic Occupational Therapy Building on the Oval to the campus, the community, and the world.

Colorado State’s faculty, staff, and students work with community organizations ranging from nursing homes to grade schools to the city’s recreation department to ensure that people with disabilities are involved in work and society.

People with disabilities often are segregated in schools, and when they exit high school, they go into other segregated settings. Colorado State’s Center for Community Participation has been working for nearly 20 years to open doors to work



Left photo: The Occupational Therapy Garden serves as an outdoor teaching and learning laboratory. Among its many features is a sensory garden with plants that can be enjoyed through the senses of touch and smell. The gardens beds are set at different heights to accommodate users sitting in wheelchairs or standing up. Center photo: Volunteer research subject Jed Shively performs tasks as an electroencephalograph (EEG) measures his brain activity at the Colorado State University Occupational Therapy Human Development Lab. Right photo: Special computer keyboards are one of the many aids available in the Assistive Technology Resource Center.

and recreation opportunities within the community, allowing people with disabilities to have meaningful work and social experiences.

Center employees and occupational therapy students develop work and/or recreation profiles for each of the center's approximately 75 clients. They help identify adaptations that can help the clients be successful.

"We try to keep a close pulse on the needs of the community and the needs of those with disabilities in the community so we can be responsive to those needs as we do our program development and as we continue our outreach," says Cathy Schelly, director of the Center for Community Participation. "We're really trying to give students not only the academic knowledge about occupational therapy, but also the hands-on experience to put that knowledge into practice and work one-on-one with people."

The Department of Occupational Therapy also does outreach on the Colorado State campus. Students, faculty, and staff with disabilities have access to the department's Assistive Technology Resource Center, which features software that enlarges the image on the screen, alternate keyboard or mouse-type devices, software that reads back to the user, and software that lets the user dictate to the computer.

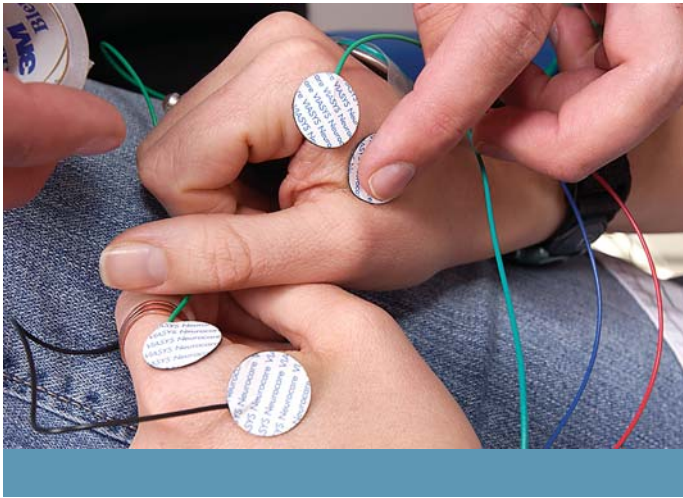
Other campuses have similar resources for people with disabilities on campus, but what's distinctive about Colorado State is that the center is integrated into the occupational therapy

department. It's a training ground for students to learn about the technology available to help people perform common work and life tasks.

"Assistive technology is another tool for occupational therapists to meet client needs," says Marla Roll, director of the Assistive Technology Resource Center. "It's a nice way to compensate for a disability and put people on an equal field, especially with regard to work and school tasks."

In addition to assistive technology and community-based intervention, Colorado State's occupational therapy department also is known for its expertise on occupational therapy in schools, biomechanics, brain function in relation to sensory processing, and how occupational therapy impacts the brain in stroke patients. Colorado State faculty lead the field in new and important areas of research.

Patti Davies, who came to Colorado State in 2000, conducts some of the most innovative research in the department. She looks at cognitive processes, particularly in adolescents whose prefrontal cortex (which is responsible for memory, planning, and impulse control) continues to develop. Using electrical encephalography, she examines brain activity and relates it to performance on thinking tasks. The research has clinical applications in the development of children with disabilities, allowing researchers to chart brain and cognitive development. The research also is contributing to evidence that adolescents think and problem-solve differently from adults.



A Colorado State University researcher prepares to use transcranial magnetic stimulation on a volunteer research subject to look at one part of the brain that controls movement and see changes in it, how it's organized, and its excitability. These variables help researchers understand therapies used to rehabilitate stroke patients.

“Some of our data is contributing to information that adolescents do not have mechanisms to do adult-like problem-solving and thinking tasks,” Davies says.

“My ultimate goal is to be able to compare children with disabilities and children without disabilities for diagnostic purposes and to use these EEG techniques in treatment effectiveness studies,” Davies says. “There was no literature on how the brain processing developed through adolescence. So I began by collecting data in children without disabilities.”

Davies also conducts similar research on sensory processing. Her research, which shows that there is a difference in sensory processing in children with and without sensory processing disorders, can help determine the effectiveness of occupational therapy intervention approaches such as sensory integration.

Another new research focus at Colorado State is the human brain's potential to change and adapt during recovery from stroke. Matt Malcolm, who joined the Department of Occupational Therapy in 2003, is examining the impact of intensive therapies that assist individuals with stroke to regain movement. Additionally, Malcolm is investigating how improvements in movement are related to changes in the brain.

“Under the right kind of conditions and the right kind of therapy, the brain can change and reorganize to help support movement again,” says Malcolm, who uses transcranial magnetic stimulation, or TMS, to examine changes in the organization and excitability of a part of the brain that controls movement. “It's important to understand the effect of these therapies and the mechanisms that facilitate a person's return to an independent lifestyle. That is the goal of my program of research.”

Research and teaching are equally important in the Department of Occupational Therapy, Davies says. Students

have a unique opportunity to be involved in the revolutionary research.

“We have really passionate educators,” Malcolm says. “I am proud to be part of a faculty that really wants to make sure the students in the program leave as strong as they can be. Our students have a really solid foundation in what occupational therapy is intended to do, and they are also strong in terms of their clinical skills.”

The Department of Occupational Therapy processes about 300 applications and admits 60 students each year into its two-year program. The two years of course work are followed by six months of field work within the community. The graduation rate is nearly 100 percent.

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– Matt Malcolm, researcher in the Department of Occupational Therapy



The department strives to balance theory and practice in its curriculum, integrating hands-on work in the community and at Colorado State. Its valuable facilities include not only the Assistive Technology Research Center, but also kitchen and bathroom settings that have been or can be adapted for people with varying disabilities. The new Occupational Therapy Garden is designed to be accessible to all people for both education and recreation.

“We really provide lots of opportunities for our student to go beyond the classroom,” Hanzlik says.

Emily Schettenhelm, a first-year graduate student, says she has been impressed with the faculty-student relationship. The program’s national reputation attracted her to Colorado State after she earned a bachelor’s degree in kinesiology from the University of Michigan.

“It was a good program that stood out above others,” Schettenhelm says. “The faculty are here to help you understand the material so you can apply it in the field. It’s not just learning out of a textbook; it’s practical application.” ♦

Up to 80 percent of Americans participate in gardening in some form. Here students learn hands-on how gardening can be used as a therapeutic activity for people with disabilities.



OT helps people achieve independence

After dealing with a developmental disability for most of his life, Matt Warren can finally live the way he wants – independently.

Warren, 31, has a job he loves putting together bicycles at Toys “R” Us and dreams of someday owning his own bike repair shop. He has his own apartment and gets around town using public buses or his own bicycle while he learns how to drive. He’s been able to integrate into mainstream society through help he’s received from the Center for Community Participation, part of Colorado State University’s Department of Occupational Therapy. The center helps hundreds of people like Warren find meaningful work opportunities and become full participants in the community.

It’s a resource Warren has used since moving to Colorado six years ago after staying in group homes and foster homes. He knew that wasn’t how he wanted to spend the rest of his life, existing but not really living.

“It was a risk I had to take and I took the risk,” Warren says as he diligently puts together a Power Rangers Dino Thunder bicycle. “I really love it out here.”

Warren works with employment consultant Carl Wieder, who helps by giving encouragement, supplemental training, mentoring guidance, gentle advice or simply staying out of the way when the young man is putting together a bicycle.

“Matt has matured so much after leaving a segregated world and joining the rest of the world,” Wieder says. “He has impacted positively the lives of his co-workers, helping to build community.”

Warren is one of about 200 participants who work with the Center for Community Participation. The center started in 1985 serving developmentally disabled adults, but now it also works with people who have physical disabilities, emotional or behavioral disabilities, mental disabilities or brain injuries. It’s the service arm of the Department of Occupational Therapy, impacting not only the University but society as well.

“CCP is a great example of how an outreach program can connect the university with the community in support of a group that can be disenfranchised,” CCP director Cathy Schelly says. “It is a vehicle for students who are at the University to contribute to the community at large.” ♦