HORIZONS

TEACHING WITH TOUCH AND TECHNOLOGY
SEEING WITH FRESH EYES

YOU KNOW HOW, WHEN YOU BECOME FAMILIAR WITH SOMETHING, YOU SOMETIMES LOSE THE ABILITY TO REALLY SEE IT?

It happens to us every day in a million ways. And then someone new comes along and reawakens you to the special qualities of that something. Well, I’m seeing the special qualities of Crotched Mountain, and I’ve had the pleasure of reflecting them back to the talented, dedicated people who work here.

Among the many amazing qualities of this place, the ability to innovate is the one that stands out most consistently. It happens in ways large and small. A para-educator discovers his student with autism concentrates better wearing a hat! A therapist watches a student utilize her full range of motion as she works at a SMART Board. Vocational students use a 3D printer to produce custom learning aids for classmates. Cutting edge eye-gaze technology enables a young man with cerebral palsy to communicate with friends in real time. Therapies like chiropractic manipulation and mindfulness meditation are incorporated into treatment for patients in an evidence-based research project. And the list goes on.

Like any good innovator, Crotched Mountain has had a long life—64 years so far—that comes from the ability to evolve in response to a changing environment. Where we once had iron lungs, we now help people breathe with portable ventilators. Where we once had a School for the Deaf, we now support communication for people statewide through augmentative and alternative communication (AAC) devices, eye-gaze technology and more.

We are building on the existing strengths of Crotched Mountain as we develop a five-year strategic plan to move us forward. Innovation is a key theme as we set goals that are achievable along with a few that will stretch us in positive ways. Every day presents opportunities for innovation in living, learning and healing—as the stories in this issue illustrate. And we welcome the challenge!

MICHAEL COUGHLIN, PRESIDENT AND CEO
WHY INTEGRATIVE CARE?
When the pain and stress associated with a brain or spinal cord injury don’t respond to traditional therapies, what do you do? Well, you could think outside the box, which is what we’re doing with the Patient-Centered Integrative Care Program (PCICP) at Crotched Mountain. Integrative care emphasizes the relationship between practitioner and patient, focuses on the whole person and employs appropriate evidence-based therapeutic approaches to achieve optimal healing.

A QUESTION OF HEALING
PCICP is a research project to determine the effectiveness of complementary therapies like chiropractic care and mindfulness meditation on rehabilitation outcomes for people with brain and spinal cord injuries and other conditions. “Experience with wounded soldiers from the wars in Iraq and Afghanistan have shown the value of a broader array of therapeutic approaches, especially for chronic pain and PTSD,” notes Kathleen Brittan, vice president for advancement at CM. “We’re excited to be part of this innovative effort.”

ON THE GROUND IN GREENFIELD
Crotched Mountain Specialty Hospital (CMSH) and Palmer College of Chiropractic have teamed up to conduct the pilot phase of the program, which integrates chiropractic assessment and treatment into the care plans of selected CMSH patients. “Approximately twenty people with brain, spinal cord and poly-trauma injuries have been involved in the study so far,” says Dr. Jeb Thurmond, chiropractor and lead clinical researcher, who has joined the hospital neuro-rehabilitation team for the study. The study focus is twofold—collecting process data on integration of chiropractic care into rehabilitation and tracking clinical outcomes. Palmer College oversees study design, data analysis and publication.

EARLY INDICATIONS
Patient Jim Maher, 63, who sustained severe trauma to his knees, hips, spine and neck in a fall, receives chiropractic treatments as part of his overall rehabilitation plan. “Our focus is on pain management and improving range of motion,” explains Dr. Thurmond, who uses a combination of spinal adjustment and mechanical percussion around joints to release soft tissue and improve blood and lymph flow. “Since working with Dr. Thurmond, I’ve reduced my pain medication by eighty percent and my range of motion has improved,” says Jim. “It feels really good.”

WHAT’S NEXT?
If the data indicates, Crotched Mountain would like to expand the availability of chiropractic to other clients on the Greenfield campus. Eventually, other evidence-based complementary therapies will be folded into the program.

The initial phase of the five-year project is funded through a philanthropic gift from Dr. and Mrs. William Kiernan. Dr. Kiernan, a retired chiropractor and Palmer College alumnus, brought the two institutions together to make the study possible.
CMS student Zach designs a keychain for the 3D printer while honing math, reading and computer skills.

THINK! INVENT! CREATE!

3D DIY @ CMS
WHAT SEEMS MIRACULOUS to adults of a certain age is par-for-the-course for students at Crotched Mountain School (CMS). And the busy 3D printer in CMS technology integrator Cindy Medeiros’ classroom is proof.

TECHNOLOGY AS TEACHER
For some time, Cindy has followed emerging data on the educational and therapeutic benefits a 3D printer can provide for students, teachers and therapists. A 3D printer is a device that can be programmed to create custom three-dimensional objects via plastic filament extruded through a moving stylus. The device can teach students computer-aided design while honing project planning, problem-solving and STEM (science, technology, engineering and math) skills. For therapists and teachers, the printer produces custom-designed educational and therapeutic aids to make learning and tasks like writing or using a tool more accessible.

NUTS AND BOLTS AND ABCs
CMS’ 3D printer arrived at the end of the spring semester. Over the summer, Cindy and several CMS high school students began the work of exploring its possibilities and potential. Richard, a student with a knack for technology, was assigned the task of getting the printer out of the box and running, after which he planned to write a paper describing the process for an English assignment. “Richard has such an intuitive feel for technology. He focused on the directions so that, should something not work, we could pinpoint the problem,” Cindy recalls. “Learning to follow step-by-step instructions is just one of many learning opportunities the printer has provided so far.”

CONCEPTS YOU CAN TOUCH
With the printer operational, the next task was to create a tactile learning aid for Christian, a blind student who was reading about the life cycle of frogs with CMS media specialist, Deborah Cole. Bubble-wrap served as a stand-in for the egg phase and a plastic frog worked for the adult phase, but where to find a replica of a tadpole? Cindy went to a 3D design website called Thingiverse and found a program to create a two-inch plastic tadpole. According to Christian’s classroom teacher Erika Cutter, who teaches several blind students, “3D printers can be real assets. Not only are they great for creating tactile manipulatives for low vision or blind students, but they offer the ability to create teaching tools that can be used across all curriculums.”

BUT THAT’S NOT ALL!
“The processes of research, design and implementation use a variety of important skills with the added benefit of creating a useful product. That’s a great motivator,” says Cindy. “And because trial and error are an integral part of any design method, it allows students to experience a reiterative process without negative self-judgment,” she adds. Next up, says Cindy, are collaborative projects to hone interpersonal skills like listening, sharing and negotiating that will prove useful in school and the workplace.
We’re grateful for the many ways Crotched Mountain has changed our lives for the better, so we do whatever we can to help.” This comment by a family member of a student who receives services through Crotched Mountain sums up the essence of our Grateful Family Program. A giving opportunity for family and friends of Crotched Mountain students, patients and clients, the program is a perfect way to show appreciation for the important work we do. Some give occasionally, some give monthly, some volunteer and all do what they can to make a difference.

The Donovan family is a great example. Brian and Nanette’s son Andrew attends Crotched Mountain School, and the Donovans have been active volunteers and donors. Last December, they took advantage of the national online giving day, Giving Tuesday, and raised about $2,000 from friends, family, co-workers and neighbors in just twenty-four hours. Their enthusiasm and generosity is how Crotched Mountain creates successes for families who might otherwise lose hope. Thanks to families like the Donovans, we continue to find innovative approaches to help people heal, learn and gain independence.

Our therapists recently developed a technique to help Andrew, who is nonverbal, express himself with a musical keyboard on a handheld device. Due to Andrew’s vision and other challenges, other adaptive keyboards haven’t worked. But he loves music. Now, when Andrew plays a particular note, an image of a person who says ‘hello’ appears. For Andrew, this particular note communicates a greeting. The possibilities for more notes and word combinations are endless. “Because of Crotched Mountain, Andrew is no longer just a spectator in activities; he is now an active participant,” says Brian.

The Donovans are grateful—and we are grateful too—for all the families who give time and resources to sustain the groundbreaking work we do with Andrew and others.

“All support, including that of grateful family members, is essential to our mission. To learn more about the Grateful Family Program and other ways to give, contact Kevin Harte, director of fundraising, kevin.harte@crotchedmountain.org, or call 603.547.1485.
**SNAPSHOTs**

**PELLETIER NAMED**

**DORINE PELLETIER**, senior accountant at Crotched Mountain, has been named to the Statewide Independent Living Council, which oversees federal funding to a range of organizations serving people with disabilities in New Hampshire. This is her second appointment to the council, which she served on as a member from 2003-2006 and as chair from 2006-2009.

**WALKING AND READING**

Summer visitors to Crotched Mountain’s accessible trails easily tackled two things at once as they walked and read good books along two storybook trails. Hikers enjoyed *As an Oak Tree Grows* on the Dutton Brook Trail and *The Tree that Time Built* on the Gregg Trail.

**NOW THAT’S FUNNY!**

Artist-in-Residence **MAREK BENNETT** worked with Crotched Mountain School students to create their own characters and tell stories through the art of comics. Utilizing skills of literacy, visual arts, creative writing and print production, CMS students saw their stories come to life digitally and on paper. The residency was made possible through the Arts Alliance of Northern New Hampshire under a VSA contract with the John F. Kennedy Center for the Performing Arts.

**EAGLES ARE CHAMPS!**

After four years, the **CROTCHED MOUNTAIN EAGLES** won the Hoops on Wheels championship title from the previously undefeated CGI Global team in a nail-biting 31-29 overtime victory.

**WHEELCHAIR HEALTH IN MOTION**

(WHIM), an organization promoting health and exercise for people who use wheelchairs for mobility, sponsored its annual hike up the Gregg Trail at Crotched Mountain in June. More than 60 hikers enjoyed exercise, views and camaraderie as they took on the longest accessible trail system in a mountain environment in the US!

**PUT THIS DATE ON ICE**

It’s the Seventh Annual Bruins Alumni Classic on Sunday, January 29 at 2pm. Sullivan Arena, St. Anselm College, Manchester, NH. The game between the Crotched Mountain Wild and Bruins Alumni will benefit CM Accessible Recreation and Sports (CMARS).
Miles Forma, Crotched Mountain School alumnus and accomplished augmentative and alternative communication (AAC) user, held a conversation with a group of interested AAC users, technicians, therapists, educators and others at ATECH Services in Concord to share the possibilities of using AAC to build a network of friends and for self-advocacy. Miles also made his annual visit to Crotched Mountain School to share his knowledge, experience and inspiration with other non-verbal students. Miles has been a guest educator for speech pathology classes at Adelphi University, Malloy College, New York University and other venues near his home in New York. ATECH Services’ speech-language pathologists offer evaluations, trials, trainings and follow-up support for a range of AAC technologies and strategies.