Spring 2014

INSIDE MossRehab

Robots Lend Helping Hands to Survivors of Strokes

Alberto Esquenazi, MD
Chief Medical Officer, MossRehab

CHAIRMAN'S MESSAGE

Stroke care has evolved over the last 10 years as acute stroke care protocols, thrombolytic therapy (clot-busting drugs) and stroke intensive care units contribute to increased survival rates.

That has led to the development of highly organized stroke rehabilitation programs where length of stay has decreased and outcomes have improved. Newer rehabilitation care paradigms have evolved with day hospital and comprehensive outpatient programs.

We have transformed our stroke program over the past several years and recently brought in new clinical leadership by expanding the role of Thomas Watanabe, MD, clinical director of our Drucker Brain Injury Center.

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Inside This Issue

At MossRehab's Stroke and Neurological Disease Center, survivors of stroke are increasingly receiving help from clinicians of the mechanical variety—rehabilitation robots. These devices are helping individuals with stroke strengthen and restore arm movements, and are enhancing MossRehab's reputation as a national leader in robotic rehabilitation.

"Used in conjunction with conventional stroke therapy treatments, robotic interventions can help patients increase the intensity and duration of precisely performed movements through the employment of adjustable assistance and resistance settings," explains Alberto Esquenazi, MD, chief medical officer at MossRehab.

Robots help improve therapy by providing precise training that is frequent and intense. It's this combination that helps stroke survivors build on their brain plasticity and recover higher levels of function. Evidence suggests that plasticity can be evoked in the adult brain even long after stroke.

Wide Selection

One of the keys to the success of robotic therapy for stroke survivors at MossRehab is the wide selection of devices made available.

"Because no single robot works to improve all movements controlled by shoulders, elbows, wrists and fingers, we rely on a variety of unique clinical robots," says Dr. Esquenazi.

MossRehab is home to some of the most complex and leading-edge upper limb robots available. The list includes the recently introduced Tyromotion collection—consisting of specialized arm, hand and finger rehabilitation robots called Diego®, Pablo®, Amadeo(R) and Tymo®. MossRehab patients also have access to the Armeo®Power, Armeo®Spring and the ReoGo which are used to initiate neuroplasticity and continue functional gains.

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BEST HOSPITALS
U.S.News & WORLD REPORT
NATIONAL REHABILITATION
2014-15

MossRehab has once again been ranked among the top 10 rehabilitation facilities in the country by *U.S. News & World Report*. Learn more at **mossrehab.com/usnews**.

MossRehab
EINSTEIN HEALTHCARE NETWORK

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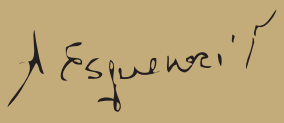
Even though the patients we treat are more medically complex and display increased functional limitations, we have developed a highly structured stroke rehabilitation program that rehabilitates more patients than any other facility in our region. Within similar time frames to those in the region, we are able to return more patients home with higher functional gains and less complications. Our successful outcomes can be attributed to the variety of programs MossRehab facilitates, from outpatient rehabilitation to our unique Stroke Comprehensive Outpatient Rehabilitation (SCOR) program, stroke support groups, the Aphasia Center and our vocational and driving programs.

At MossRehab we have been early adopters of technology, and our large collection of robots used for rehabilitation allows us to provide a more intense and focused program for the benefit of our patients.

Education and research in stroke rehabilitation are important components of the overall approach we take at MossRehab. Secondary stroke prevention is critical to reducing potential complications for the patients who place their care under our responsibility.

We love to hear from you with feedback and questions. Visit **mossrehab.com** to learn more about our cutting-edge programs or drop us a note at **insidemossrehab@einstein.edu**.



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"Having tested and adopted several commercially available robots, we're actively engaged in the development of clinical research, training protocols and clinical applications," says Dr. Esquenazi. "In fact, MossRehab conducted the original U.S. clinical trials for the ReoGo. We are first in the nation to offer the entire Tyromotion collection, making MossRehab one of America's most experienced providers of multiple integrated robotic applications."

MossRehab physical therapist uses Armeo Spring robotic software with patient to improve hand and arm functionality.

Understanding the nuanced benefits of each robot requires clinicians to first understand the unifying characteristic of all robots; they are designed to repeat motions.

"To promote proximal arm and elbow control through the robotic execution of lots of repetitive, passive or active motions, I recommend ReoGo and the ArmeoSpring. For digit motions, we use Amadeo," says MossRehab Occupational Therapist Joseph Padova, OTR/L. "The implication for therapy is that with motor control for stroke survivors it is important to provide the opportunity to repeat the desired movement patterns frequently in carefully structured activities. These robots provide a way for us to do this, without fatigue factors that therapists can experience when trying to provide the guidance and handling of the limb over long periods of time."

Padova, in conjunction with the Einstein Society, used some of this understanding to help design the RELEAS™ hand splint, which is the first functional hand splint that allows wearers who meet specific criteria to use the impaired hand during activities of daily living after a stroke.

> **"We are first in the nation to offer the entire Tyromotion collection and Amadeo, making MossRehab America's most experienced provider of multiple integrated robotic applications.**
>
> **Alberto Esquenazi, MD**

"As a therapist, it is important to understand that robotics is not a replacement for the skills, judgments and teachings of the therapist," Padova adds. "Rather, it is a tool that a therapist can combine with other techniques to maximize functional outcomes."

Playing Games

Although robots are valuable therapy tools for therapists, they can be highly engaging for patients because the robotic tools are often paired with intuitive and interactive cognitive challenging gaming software.

"People really like games, computers and virtual interaction—it's becoming a huge part of contemporary society," explains Occupational Therapist Melissa Muller, OTD, OTR/L. "At MossRehab, our robots don't just support current evidence-based practice concepts, such as mass practice activities, task-

oriented activities, visual feedback during movement patterns, and reeducation of movement patterns post-stroke, they also reflect contemporary interests."

Muller notices particularly positive outcomes among patients with stroke who use Pablo and Tymo from the Tyromotion collection.

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>
> **Joseph Padova, OTR/L**

"The gaming software facilitates left and right scanning, saccades, and attention among clients with visual perceptual deficits. In terms of hemiparesis or weakness, the Pablo is a graded system and uses visual feedback and cause-and-effect interactions with the system to allow for distal or proximal movement patterns. The visual feedback helps its users understand and grade any active movement that they have available at any given time." says Muller. "I generally like robotic interventions that allow for volitional movement."

As always, MossRehab has one eye on the future.

"We are presently helping with the development of a muscle-activated trigger for the initiation of movement for the Amadeo and the Armeo Power," says Dr. Esquenazi. "The patient may have paralysis but some muscle activity can be detected with special EMG sensors, which help us measure the electrical activity of the muscles."

MossRehab's current research efforts suggest that robots have an even greater potential to provide the added benefits still wanted by so many patients post-stroke, as well as clinicians.

Occupational Therapist Melissa Muller helps patient use Tyromotion robotic software. MossRehab was the first rehabilitation facility in the U.S. to offer the Tyromotion collection.

Q&A Myrna Schwartz, PhD, Discusses Aphasia Research and Clinical Integration

Renowned aphasia expert Myrna Schwartz, PhD, discusses research with a colleague.

Among the 750,000 Americans who have strokes each year, about 80,000 individuals experience aphasia, yet the study of aphasia treatment has a short history, spanning only the past several decades. Myrna Schwartz, PhD, associate director of the Moss Rehabilitation Research Institute (MRRI) and research professor of Rehabilitation Medicine at Thomas Jefferson University, is a national leader in aphasia research. Schwartz, who heads the Language and Aphasia lab at MRRI, which conducts basic and applied research on language processing impairments in stroke discusses her research and efforts to pioneer effective treatments for language disorders.

You were researching aphasia and acquired language disorders early in your career, in the 70s. What intrigued you?
My interest was, primarily, to understand how it is that brain damage from stroke or progressive dementia sometimes cleaves the normal language system 'at its joints,' impairing one component of the system while leaving others quite intact. In this vein, I published influential papers on dementia patients who had selective impairment of semantic (meaning-related) knowledge, and on patients with stroke aphasia who had intact grammatical competence in the face of very impaired grammatical performance.

What prompted you to join MossRehab?
I came to MossRehab in 1986 to study traumatic brain injury, under a fellowship from the National Institutes of Health. Working in a rehab setting allowed me to pursue my research on language disorders in greater depth, to study more and varied patients, and to interact with clinicians in an effort to devise more effective treatments.

You helped launch the Moss Rehabilitation Research Institute in 1992 and collaborated to pioneer therapies that have made a difference for many patients. What highlights come to mind?
My colleagues and I have pioneered the use of neural style models to explain, through simulation, how damage to different parts of the language system produces particular symptoms of aphasia. In parallel, my colleagues and I have developed new tests and procedures for diagnosing different symptoms of aphasia, including the *Quantitative Production Analysis* for assessment of grammatical disorders and the *Philadelphia Naming Test* for disorders of word retrieval. We developed new forms of treatment, such as *Mapping Therapy* for the treatment of disorders of sentence production. We have also pioneered computer-based language treatment, including the development of MossTalk Words® and the clinical evaluation of SentenceShaper®, developed by MRRI Adjunct Scientist, Marcia Linebarger.

> **"While many around the country have followed our lead in creating venues that aim to meet the psycho-social and educational needs of families living with aphasia, few if any have managed to duplicate our Aphasia Center's commitment to clinical-research integration."**
> **Myrna Schwartz, PhD**

What excites you about your current research and its potential to help patients with language enhancement after stroke?
New techniques for imaging details of the human brain *in vivo* continue to expand and alter older conceptions of how language is represented in the brain and the impact of neurological injury and disease. My lab is also engaged in collaborative research involving the use of electromagnetic stimulation of the brain to measure and possibly enhance the brain's capacity to adaptively reorganize in response to stroke-related aphasia.

You have always been an advocate of collaborative research. What partnerships are you managing now?
I currently lead a team of researchers from University of Pennsylvania, Drexel University and University of Illinois in research that utilizes new imaging technology to precisely localize the brain lesions responsible for particular symptoms of aphasia. I am also very excited to be working with Erica Middleton, PhD, who recently joined the MRRI faculty, on research that brings learning theory into the aphasia clinic. This research addresses questions like: 'Do patients learn from their speech errors, or are those errors stamped in through learning?' Questions like that have serious implications for how we structure speech therapy in the clinic.

As research director of the MossRehab Aphasia Center, what current initiatives are a source of pride?
The Aphasia Center's Advanced Clinical Therapy (ACT) program provides in-depth evaluation and treatment using protocols that are supported by research. This program pioneered the evidence-based approach that is now being promulgated in all aspects of clinical medicine.

Is there a career highlight of which you are especially proud?
One of my proudest achievements was and is the co-founding—with Ruth Fink and others— of the MossRehab Aphasia Center. While many around the country have followed our lead in creating venues that aim to meet the psycho-social and educational needs of families living with aphasia, few if any have managed to duplicate our Aphasia Center's commitment to clinical-research integration.

> **"One of my proudest achievements was and is the co-founding—with Ruth Fink and others— of the MossRehab Aphasia Center."**
> **Myrna Schwartz, PhD**

Tackling the Rigors of Aphasia and Public Speaking

Speeches are common at celebrations. But one presentation made during the Sweet 16th anniversary celebration of the MossRehab Aphasia Center was uncommonly touching.

John Donofrio had a stroke in 2005 at the age of 49, resulting in aphasia. Two years later, he visited the MossRehab Aphasia Center and has continued doing so ever since. His loyalty to the Center and appreciation for the staff prompted him to take the challenge to make a presentation for the Center's anniversary celebration.

Using SentenceShaper®, a laptop communication aid developed at MossRehab, Donofrio assembled the words and phrases into sentences and added personal photos in a recorded slide presentation.

"Moss saved me and I learned to cope," he said during the presentation. He explained that he continues to participate in group sessions and therapy "because I need to go for friendship and speech."

"Everytime I listen to one of the stories John creates on SentenceShaper or see him laughing and participating in the conversation groups we have at the Aphasia Center, I am reminded of how much people with aphasia can improve over time and in the right environment, and how important it is to have a place to go that nurtures recovery for the long term," says Ruth Fink, MA, CCC-SLP, clinical director of the Center.

While the Center continues to provide opportunities for people with chronic or persisting aphasia to participate in language research and individual outpatient therapy, it also fills a need for people with aphasia to meet in a supportive environment for good conversation and lifelong learning opportunities.

"For some people with aphasia, recovering speech and language skills will not happen, or it will happen very slowly," explains Fink. "The Center provides people like John with a place to socialize and participate in life again, in spite of the aphasia."

For John, the Center has made all the difference. "I'm getting on with it, thanks to MossRehab," he says.

Mirror Therapy Clinical Trials Prove Positive for Treating Hemiparesis

For those patients with hemiparesis following stroke, hope may come from a novel therapy being investigated at MossRehab that uses mirrors to help increase recruitment of the contralesional brain hemisphere.

Mirror therapy works by creating a visual illusion to potentially strengthen arms or hands. Patients sit with a mirror perpendicular to their body, reflecting the healthy limb and blocking the view of the affected one. When the patient looks into the mirror, the brain is tricked into thinking it sees both limbs as healthy. When the uninjured arm or hand is moved, the brain tries to stimulate the injured side to move as well.

“It’s amazing that simply giving illusory visual feedback to stroke survivors can make them move better,” says Steven Jax, PhD, a Moss Rehabilitation Research Institute (MRRI) scientist who runs the mirror therapy clinical trials and is an expert in motor learning after stroke. “It’s remarkably low-tech and effective.”

According to Jax, mirror therapy not only helps strengthen the arms and hands of people with stroke, but is also especially helpful for people who have arm or hand pain in addition to problems making movements. Jax is currently furthering his research in mirror therapy with a clinical trial of 100 chronic stroke patients who are following a home-based mirror therapy regimen.

“Because this therapy is so simple, it’s possible for almost every stroke survivor with movement problems to be able to use it at home. That’s one of the most exciting parts of the project—training people to give themselves mirror therapy,” Jax says.

Providing evidence that mirror therapy could be administered at home would have strong implications for the cost of treating hemiparesis, especially relative to alternative treatments that require significant amounts of therapist time (constraint-induced movement therapy) or expensive equipment (robotic training). Pilot data suggest that home-based mirror therapy could lead to clinically significant improvements in functioning.

The trial is also investigating why some patients benefit from mirror therapy and others do not, even though significant individual differences have been reported.

“What’s desperately needed in rehabilitation is data that helps clinicians select the right therapy for the individual patient,” says John Whyte, MD, PhD, director of the MRRI. “For that purpose, we need to see who the patients are that have the greatest benefit, who has very little benefit, and identify patient characteristics that can predict this in advance so we don’t have to wait for one therapy to fail and then pick another by trial and error.”

Moss Rehabilitation Research Institute Scientist Steven Jax, PhD, demonstrates how patients use mirror therapy.

Jax’s study is important because it is with a large sample size, offering the potential to illustrate variations in treatment benefit.

“He has identified a number of hypotheses about what might account for greater and lesser benefit and has enough subjects and is collecting the right kinds of clinical and imaging data to test these subgroup hypotheses,” concludes Dr. Whyte.

MossRehab Research Institute Focus on Stroke

The Moss Rehabilitation Research Institute (MRRI) sponsors interdisciplinary research aimed at improving human function and adaptation to disability. MRRI focuses on three major areas of research: cognitive neuroscience/cognitive rehabilitation; motor control/mobility rehabilitation; and outcomes research.

MossRehab Stroke Unit to Apply CUSP Safety Program

When MossRehab initiates the critically acclaimed five-step Comprehensive Unit-based Safety Program (CUSP) later this year, it will be among the first stroke rehabilitation programs in the nation to do so. Less about changing an already collaborative culture at MossRehab and more about fine-tuning quality improvement, CUSP is expected to enhance high levels of patient safety.

"Safety is an issue everywhere," says Justine Sgrillo, RN. "I oversee care in a 30-bed stroke unit where almost every patient has cognitive and physical impairments. Keeping them safe is a huge challenge and a primary goal. CUSP will help our staff take an interdisciplinary approach to solving potential patient safety problems."

The concept of CUSP was developed by the Johns Hopkins Quality and Safety Research Group and deployed to selected hospitals across the country with federal support. It is designed to improve clinicians' communication, awareness of safety and ability to learn from errors, and to help improve teamwork. MossRehab expects to leverage CUSP to translate clinical evidence into practice and decrease potential safety problems.

"CUSP should help us ensure all team members have an understanding of the science of safety," explains Julie Hensler-Cullen, RN, MSN, MossRehab's director of education and quality. "The scope of knowledge of the many MossRehab professionals and the unique involvement of the different team members will serve us well."

Significant improvements in safety have been reported by hospitals using CUSP, which recognizes that a unit's safety culture is a predictor of sustainable safety, including fewer patient complications and infections. For people who have had a stroke, CUSP's interdisciplinary approach should drive improvements in decreasing specific issues regarding fall risk, medication errors, infections and aspiration.

"I also predict we will positively affect the patient experience and have improved staff satisfaction," says Hensler-Cullen.

Key to generating improved outcomes is the way that CUSP empowers staff to assume responsibility.

"Our staff are already very engaged, but CUSP will further unite staff and administration and enhance our teamwork," explains Sgrillo, who has been involved with a CUSP initiative in the medical/surgical unit at Einstein Medical Center Philadelphia.

There are five steps to the CUSP framework:

- Train staff – Teach staff about the science of safety and its application to teamwork and technical work on the unit.
- Engage staff to identify risks – Provide a two-question survey to each unit member asking: How is the next patient going to be harmed on this unit? How can we prevent this harm from occurring?
- Hold safety rounds – Organize monthly safety rounds with senior executives and all unit staff to discuss safety issues and identify any clinical or operational risks.
- Address identified risks – Review identified risks and list the factors that have contributed or could contribute to the risk. Implement changes to reduce the probability of recurring risks, and produce a summary of what was learned from the investigation.
- Implement tools for improvement – Highlight priority risks and identify tools to address them on a continuing basis.

At MossRehab, quality improvement and patient safety are already top priorities. The CUSP framework promises to help to effectively join executives and physicians with front-line caregivers, staff and unit managers who have the expertise and the knowledge needed to further improve safety.

"I expect that CUSP will result in further encouragement of problem solving that could lead to new treatment protocols such as clinical guidelines embedded in our electronic medical records and practical, user-friendly care checklists," says Hensler-Cullen.

MRRI scientists are working to understand the roots of problems, and with regard to stroke rehabilitation, are focusing on helping patients:

- Regain speech by investigating parts of the brain responsible for understanding the meaning of words versus knowing how they sound.
- Reacquire use of impaired arms and hands by investigating how skilled reaching of the arm is controlled and if what is being reached for matters.
- Relearn basic tasks by understanding how electrical stimulation of the brain affects learning and retention of motor skills.

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Helping Stroke Survivors Overcome Emotional Dysfunction

To help patients and their families deal with the emotional changes often attributed to stroke and other brain injuries, MossRehab has partnered with Belmont Behavioral Health—one of the largest providers of mental and behavioral healthcare in the Philadelphia region—to open the Neuro-mental Health Clinic.

The only clinic of its kind in the region, the Neuro-mental Health Clinic is specifically dedicated to providing psychological and psychiatric treatment for patients with cognitive impairments due to neurologic conditions, including stroke. MossRehab and Belmont Behavioral Health are both part of Einstein Healthcare Network.

"MossRehab is distinguished for its dedication to neuropsychological services for inpatients and outpatients," explains Claire McGrath, PhD, neuropsychology supervisor, Stroke and Neurologic Disorders Program and the Spinal Cord Injury Unit, MossRehab. "Combining forces with Belmont allows such services to be provided to a larger population."

The Clinic provides patients with treatments that combine neuropsychological assessments of cognitive strengths and weaknesses with psychotherapy interventions that try to accommodate any cognitive limitations that are found.

"In doing so, we have also developed ways of combining the funding resources available for medical care with those available for behavioral health, providing individuals with stroke with greater flexibility in attaining access to the neuropsychological assessments and psychotherapies they need," says John Whyte, MD, PhD, director, Moss Rehabilitation Research Institute.

The Clinic offers treatment to help address problems with mood, depression, anxiety and anger, and difficulties adjusting to a patient's disability. A Cognitive Behavior Therapy (CBT) model is used to treat dysfunctional behaviors, emotions and thoughts in a goal-oriented manner.

"What makes the Clinic unique is that psychotherapists provide treatment that incorporates an understanding of neurologic injuries," says McGrath. "Neuropsychiatrists are also available to provide medical management of psychiatric symptoms."

Research from the National Institute of Mental Health indicates risk and severity of post-stroke depression can be attributed to three things, singularly or in concurrence: the areas of the brain in which stroke damage occurred; genetics or personal histories of mood or anxiety disorders; or experiencing high levels of isolation after stroke. Research at MossRehab is furthering this insight.

"Most researchers believe that depression after brain damage can be due to either biological changes in the brain, a sense of functional loss, or a combination of both," says Dr. Whyte. "There is evidence that left-sided strokes are more likely to cause depression than right-sided strokes, which suggests some biological influences. It may be that early onset depression has more of a biological cause, and later onset depression may be more strongly influenced by the experience of disability."

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Research often leads to innovations, and those that have particularly helped stroke survivors include:

- MossTalk Words®, a specialized software program developed by MossRehab researchers and clinicians. It provides patients with hours of practice in comprehending and producing words, phrases and sentences. MossTalk Words can be used independently at home or with a volunteer in the computer lab.
- SentenceShaper®, developed at MossRehab and Unisys Corporation by MIT-trained linguist and software developer Marcia Linebarger, PhD. This specialized software program helps patients formulate and produce more complete and informative language.
- Virtual Reality Lateralized Attention Test (VRLAT), developed by Laurel Buxbaum, PsyD in collaboration with colleagues at MRRI. This test uses computer technology to simulate the sensation of driving along a winding path. It detects even subtle signs of left neglect, which can have serious safety repercussions in everyday life.
- RELEAS therapeutic splint, invented by Joseph Padova, an occupational therapist at MossRehab. This splint helps restore hand opening and enables individuals to use their impaired hand to functionally grasp, hold and release.
- Insight into handling errors and feedback in language therapy, researched by Erica Middleton, PhD, director of the Learning and Language Laboratory. This research is helping to inform effective treatments for aphasia with a focus on the rehabilitation of naming impairments.

Horticultural Conservatory Advances Patient Rehabilitation

> **Horticultural therapy offers a holistic approach to therapy that can help our patients increase their cognitive, physical, psychological, emotional and social skills.**
>
> **Abby Jaroslow, therapist**

A high-tech conservatory is now benefiting MossRehab patients, helping to advance rehabilitation through gardening activities in a bright and airy greenhouse. The Alice and Herbert Sachs Conservatory–named in honor of the project's benefactors–features three distinct work, grow and show areas, as well as an outdoor patio.

The work area is where patients participate in horticultural activities to gain practice in cognitive sequencing; increase strength, range of motion and balance; improve bilateral upper-limb integration and fine motor skills; and build in functional tasks. Activities in the conservatory are coordinated by the horticultural therapist supporting each patient's physical and occupational rehabilitation goals.

"The experience of being in this environment is therapeutic itself," says Abby Jaroslow, registered horticulture therapist for MossRehab. "Horticultural therapy offers a holistic approach to therapy that can help our patients increase their cognitive, physical, psychological, emotional and social skills. By taking on specific horticultural tasks, we can address distinct therapy goals for a patient, and the patient engages in meaningful work that can provide immediate gratification."

Consider the benefits a person with stroke gains while working with the therapist in the conservatory to divide and repot some plants into a larger container: By following directions, cognitive skill is enhanced. By working seated and standing up, ambulation and balance is improved. By engaging with the therapist in a less clinical environment, social and emotional gains are made.

"The benefits of horticultural therapy have been known for hundreds of years, but it is still somewhat magical to work with a patient for an hour in the conservatory and then have another therapist comment that the patient was more verbal during that session than in the previous month," says Jaroslow.

In addition to the work area, the conservatory's grow area is a working greenhouse that supports the horticultural center. The show area is a plant-filled respite space for patients and visitors. It features a living wall, stones from the Wissahickon Creek, finished concrete, natural cedar trim, a calming water feature and day lighting.

"We are all predisposed to connect with nature. The conservatory provides patients and their families that opportunity and it is exciting to see people come into the conservatory for the first time," says Jaroslow. "You can see the immediate impact of the environment – the very visible joy that comes over each person – almost the moment they step into the space."

The conservatory was made possible by the generosity of Montgomery County residents, Alice and Herbert Sachs, who wanted to provide the therapeutic and communal advantages of horticultural therapy to patients at MossRehab.

MossRehab Residency Alumni Deanna Janora, MD

Then: Chief Resident and Clinical Instructor from 1994 to 1995.

Now: Associate Professor of Physical Medicine and Rehabilitation, NeuroMusculoskeletal Institute (NMI), Rowan University School of Osteopathic Medicine.

Many people have defining moments that launched careers. For Dr. Deanna Janora, that moment was at MossRehab when she was a first year medical student.

“I still recall the look of wonder on the face of a gentleman standing on his prosthesis for the first time,” she says.

That memory has served as a lynchpin supporting a remarkable career that includes teaching, patient care and research.

As a physician of rehabilitation medicine at the NeuroMusculoskeletal Institute at Rowan University School of Osteopathic Medicine, Dr. Janora sees a wide range of outpatients. Two half days a week she does physical medicine and rehabilitation (PM&R) consultations for patients at two skilled nursing facilities. She also teaches physical diagnosis and pain management, is involved in music medicine research and has been part of a few clinical trials for new medications for chronic pain, opioid-induced constipation and use of botulinum toxins.

“Developing an ongoing relationship with my patients and helping them to participate more fully in their own lives and activities that are important to them inspires me at work,” she says. “I also really enjoy teaching students and residents about what the field of physiatry can offer their patients. They are usually pleasantly surprised.”

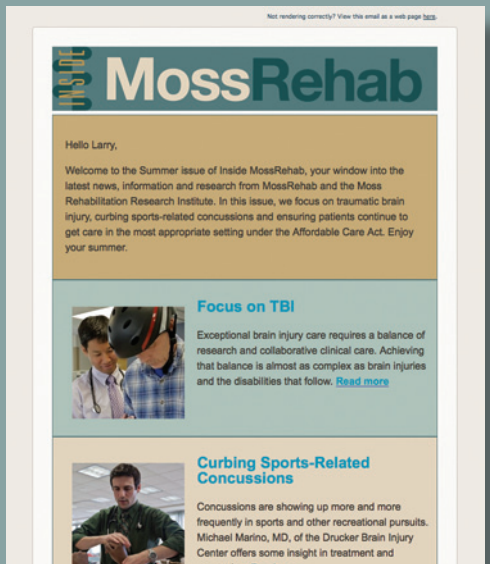
While the department of Physical Medicine and Rehabilitation is a small one, Dr. Janora is proud to be part of a greater interdisciplinary team.

“The collegial atmosphere makes this a really great place to work,” she says. “As one of the best osteopathic medical schools in the country, their understanding of the musculoskeletal system results in an appreciation for PM&R. Plus, as a small department, we have more flexibility to meet new challenges and create opportunities to try new things more quickly.”

Dr. Janora’s current practice continues to be influenced by her experiences at MossRehab, both in electrodiagnostic medicine, treatment of spasticity and use of neurotoxins. “The wonderful experiences and analytical approach I learned as a medical student and resident in the [Sheerr Gait and Motion Analysis Lab] have contributed to my success and the anatomy courses taught by Carson Schneck, MD, PhD, have been invaluable. I still use some of his sayings to teach our students,” she says.

She also keenly appreciates her memories of the annual presentations and demonstration on abnormal gait patterns by Nathaniel Mayer, MD, and the EMG course taught by Gerald Herbison, MD.

“I only wish YouTube had existed back then, so I wouldn’t have to rely solely on my memory.” she says.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INSIDE MossRehab

Hello Larry,

Welcome to the Summer issue of Inside MossRehab, your window into the latest news, information and research from MossRehab and the Moss Rehabilitation Research Institute. In this issue, we focus on traumatic brain injury, curbing sports-related concussions and ensuring patients continue to get care in the most appropriate setting under the Affordable Care Act. Enjoy your summer.

Focus on TBI

Exceptional brain injury care requires a balance of research and collaborative clinical care. Achieving that balance is almost as complex as brain injuries and the disabilities that follow. Read more

Curbing Sports-Related Concussions

Concussions are showing up more and more frequently in sports and other recreational pursuits. Michael Marino, MD, of the Drucker Brain Injury Center offers some insight in treatment and

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Alumnus Berger Passes Away

Gary G. Berger, DO, a member of the 1987 class of Temple University/MossRehab Residency Training Program, died on June 25 at Menorah Medical Center in Overland, Kansas, where he had worked for more than 20 years. Dr. Berger was 57 years old. A graduate of the Philadelphia College of Osteopathic Medicine, Dr. Berger was medical director of Menorah's inpatient rehabilitation unit, which was repeatedly recognized for excellence. He died after a brief illness.

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