TIRR MEMORIAL HERMANN

JOURNAL

THE INSTITUTE FOR REHABILITATION AND RESEARCH

SPRING 2012

IN THIS ISSUE

A Worldwide Search Leads an ESL Teacher to TIRR Memorial Hermann's Low-Vision Program

On April 18, 2011, Barbara Kalis suffered a left parietal occipital intraparenchymal hemorrhage that left a blood clot the size of a golf ball in her brain. Kalis, who teaches English as a second language in Thailand, underwent a craniotomy and hematoma removal in her adopted country.

"I was in a coma and don't remember the first two or three weeks after the surgery," she says. "When I became conscious, I couldn't walk and I couldn't see. I could talk but I didn't really know what I was talking about."

Her colleagues at the International School Bangkok rallied to help her recover. "I did physical therapy in Thailand and, because I'm a language teacher, I created my own self-study program for relearning language," she says. "A colleague of mine volunteered to give me math lessons, starting in the hospital and continuing at home, and I worked to restore my vision as best I could. I tried everything I could to recover."

Kalis' vision started to return in panels. "I could feel myself getting better through the natural process of healing, but I couldn't read very much and I like to read. I was told in Bangkok that I could expect to get only 5 percent of my vision back after this type of stroke, according to the medical literature."

Her sister Deborah Jacobvitz, a psychology professor at The University

Barbara Kalis

of Texas at Austin, pitched in to help and found the same statistics in her own Internet research. "Everything we read was very discouraging," Kalis says. "My sister asked me if it was worth it to come all the way to the United States for only a 5 percent return of vision, but I was positive I could get more than that back."

Kalis' neurologist in Bangkok, Tulyapronchote Roekchai, M.D., encouraged her to seek help from James Grotta, M.D., co-director of the Mischer Neuroscience Institute at Memorial Hermann-Texas Medical Center and professor and chair of the department of Neurology at The University of Texas Health Science

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TIRR MEMORIAL HERMANN Rehabilitation & Research

FEATURED IN THIS ISSUE

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Clinical Chief of the Spinal Cord Injury Program
Medical Director of Respiratory Medicine

Cindy Bukauskas, C.C.C.-S.L.P.
Clinical Coordinator of Speech-Language Pathology Services
TIRR Memorial Hermann Adult and Pediatric Outpatient Rehabilitation

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Brain Injury Research Fellow

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Chief Medical Officer
Chair of the Department of PM&R, UTHealth Medical School

Sara Goel, M.D.
Third-Year Resident

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Brain Injury Administrative Fellow

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Occupational Therapist

Amy Marroquin, M.T.-B.C., N.M.T.
Neurologic Music Therapist

Maegan Morrow, M.T.-B.C., N.M.T.
Neurologic Music Therapist

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Program Manager for Brain Injury and Stroke Programs

Julie Welch, P.T., N.C.S.
Physical Therapist

MESSAGE FROM THE CEO

This spring we have much to look forward to at TIRR Memorial Hermann. In May we broke ground on the construction of our new research center, made possible by the generosity of philanthropic donors. When the three-story, 42,000-square-foot facility is completed next spring, it will allow us to gather all of our research programs under one roof on our Campus, encouraging daily collaboration between our divisions of research and between research and clinical staff.


Carl E. Josehart, CEO

Among those programs is our new Motor Recovery Research Lab, where physicians and scientists are working together to design and construct new therapeutic devices, including robotic exoskeletons to assist patients with natural motions that are no longer possible after traumatic brain injury or spinal cord injury. We're also renovating new space for our growing Adaptive Technology Program, which will make devices approved for clinical use available to our patients.

In this issue you'll read about our new Erigo®, which has replaced the tilt table to initiate mobilization of neurological patients in the early phase of rehabilitation. When we acquired the device in January, TIRR Memorial Hermann became one of only a handful of facilities in the country offering patients a safer, more effective way to move from bed rest to standing. The Erigo also has a stepping component for use when patients are in an upright standing position.

Our view of the fundamentals of treatment following illness or injury is broad: medical recovery, physical rehabilitation, restoration of an individual's ability to participate in all aspects of life as fully as possible and cutting-edge research that will lead to the regeneration of function in new ways. We hope you'll join us in celebrating our growth in research, technology and infrastructure.

Carl E. Josehart
Chief Executive Officer
TIRR Memorial Hermann

TIRR Memorial Hermann Journal is published four times a year by TIRR Memorial Hermann. Please direct your comments or suggestions to Editor, *TIRR Memorial Hermann Journal*, TIRR Memorial Hermann, 1333 Moursund, Houston, TX 77030, 713.797.7229.

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Spring 2012

We have opportunities for outstanding rehabilitation professionals. If you are interested in joining our team at U.S.News & World Report's *No. 4 rehabilitation hospital, contact Monica Kinnard, recruitment consultant, at 713.797.7281 or Monica.Kinnard@memorialhermann.org All available opportunities can be viewed at memorialhermann.org.*

www.tirrmemorialhermann.org, www.ilru.org

Blessings Through the Pain: Nate Lytle Takes Back His Life

The doctors who originally treated Nate Lytle in 2007 were surprised that he survived. A respected Gulf Coast longboard surfer, the 23-year-old fell from a 10-foot ladder at work, hit his head on a pipe and shattered his wrist.

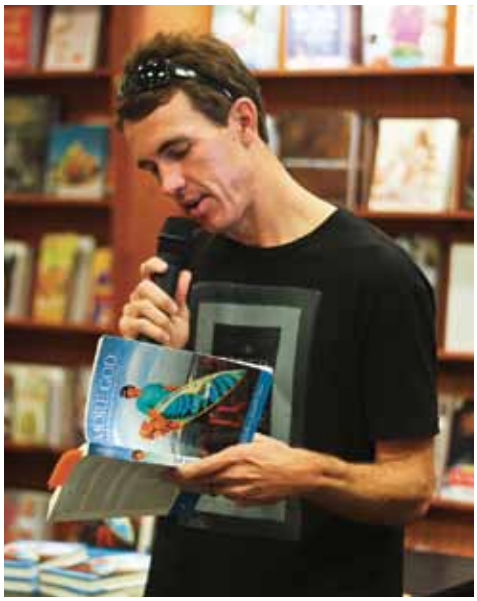
Conscious after the fall and accompanied by his parents, Lytle walked into an emergency center in Victoria, Texas, to have his wrist examined. While waiting to be seen, he became incoherent and had trouble holding up his head. His condition deteriorated rapidly, and he was rushed to the trauma unit and put on life support. When a CT scan revealed that a large portion of his skull was shattered, he was taken immediately to surgery. Lytle's doctors told his parents that his chances of survival were slim.

In the OR, the neurosurgeon discovered bone fragments cutting into his brain and three hematomas. During the surgery, the left side of his brain was not functioning. To everyone's surprise, he survived, but his parents were told that he would likely never walk or talk again due to the severity of his injury.

Still in a semiconscious state, he was transferred to TIRR Memorial Hermann under the care of physical medicine and rehabilitation specialist Sunil Kothari, M.D., an assistant professor of physical medicine and rehabilitation at Baylor College of Medicine. When he left five weeks later, he was walking unassisted.

Lytle remembers waking up from his semiconscious state and thinking two things. "I kept hoping a former patient would walk into my room and tell me, 'You can come back just like I did.' I also told my parents that the only thing I knew for sure was that I had to write a book."

During his first year and a half of therapy, he started jotting down the thoughts that would eventually become the book, *More God: Seeing the Blessings Through the Pain*, written with the help of James H. Pence and released in December 2011.



Nate Lytle at his book release

Lytle asked TIRR Memorial Hermann CEO **Carl Josehart** to write an introduction to his book. Josehart wrote: "Nate's journey highlights the realities of life with a brain injury, balanced with a message of optimism and hope. Through Nate's eyes we realize that different can be good. Different can be a gift in itself. Different can ignite a passion or skill or talent individuals have yet to discover.

"This book is a testimony to his ability to see beyond his personal situation, take advantage of a life-changing moment and create a lasting legacy to inspire others whose lives have been interrupted by disability. Nate reminds us that a disabling accident or injury can be a new beginning. His words challenge us to take back our lives – the world depends on our contributions – and to never bury our gifts or silence our voice."

Lytle decided he wanted to give back to TIRR Memorial Hermann, and he told his family, 'We're going to be those former patients who visit people going through rehab and encourage them that they, too, can regain their independence."

Accompanying him on his visits to the rehabilitation hospital is his wife of three years, Brianna Lytle, a nurse who treated him when he was hospitalized in Victoria. "I opened my eyes and saw this girl with bright eyes and a warm spirit and really nice teeth," he recalls. "Then I went back to sleep. I remember telling my parents and friends about her." He met her again at a "Pray for Nate" benefit planned by his friends when he returned home after leaving TIRR Memorial Hermann. About 2,500 people attended the benefit.

Almost a year to the day since the accident, Lytle was back on his longboard. He's spent every summer since working with other people with disabilities. "One person can look at brain injury as the end of the world," Lytle says. "I looked at it as a new beginning. I know this sounds strange, but falling and almost dying was the best thing that has ever happened to me. One of my early mentors in church told me that God never wastes a hurt. That's what I tell people when I speak at churches and hospitals. Use every struggle in life as an opportunity to serve people and serve God." ◆

Spotlight: TIRR Memorial Hermann Offers Two Unique Fellowships

When **Richard Huang, M.D.**, was selected last year as TIRR Memorial Hermann's first brain injury administrative fellow, he became one of the first physical medicine and rehabilitation fellows in the country to participate actively in senior-level decision-making. The fellowship is part of the rehabilitation hospital's efforts to ensure that hospitals and their affiliated physicians are more closely aligned in healthcare delivery.

Dr. Huang is co-mentored by chief medical officer **Gerard Francisco, M.D.**, attending physician **Cindy Ivanhoe, M.D.**, and CEO **Carl Josehart**, with whom he meets at least once a month to review the administrative aspects of running a rehabilitation hospital.

"It's a unique opportunity," Dr. Huang says. "I don't know of any other fellowship that offers as close a look at the administrative inner workings of a hospital. I applied because TIRR

Music to Their Ears

Houston attorney Paul Waldner arrived at TIRR Memorial Hermann unable to speak, with limited awareness of his surroundings, after suffering a heart attack that led to an anoxic brain injury. Eighteen-year-old Celeste Powell has a history of cystic fibrosis and end-stage lung disease. After receiving a lung transplant, she came to the rehabilitation hospital to learn how to increase functional movement.

Music therapist and physical therapist working together

These two patients and others undergoing rehabilitation at TIRR Memorial Hermann are discovering what ancient Greek philosophers believed to be true: that music can help heal the body and soul. "Music has a universal quality that transcends all languages, cultures, creeds and social classes. Its therapeutic effects have been recognized for centuries," says neurologic music therapist **Maegan Morrow, M.T.-B.C., N.M.T.** "Music is a wonderful therapeutic tool because it's processed in several areas of the brain. It has connections with the areas of the brain that control speech, language and motor function. Music therapy has been shown to help coordinate movement. It has a connection with our emotional center, which allows us to identify our emotions and express what we can't easily put into words."

TIRR Memorial Hermann has employed music therapists for more than 20 years, helping patients with traumatic brain injury, stroke, Parkinson's disease, multiple sclerosis and other disorders improve neurological deficits. "Our main objective in working with our patients is to stimulate and rebuild new connections in the brain for memory, speech and motor activities," says Morrow, who with her colleague **Amy Marroquin, M.T.-B.C., N.M.T.**, carries a patient load of about 30 people. "Our techniques are evidence based and founded on a neuroscience model of music perception and production, and the influence of music on functional changes in different areas of the brain. We align our plan of music therapy with each patient's program of physical therapy, occupational therapy and speech therapy to provide support for the other disciplines."

Music therapy was an essential part of Paul Waldner's recovery process. "The only thing he responded to was music, and he was always able to sing even when he was unable to respond appropriately verbally," Marroquin says. "Music expanded into his other therapies. For instance, listening to his favorite music helped him stay on task in physical therapy and calm him when he was frustrated with his progress."

Music helped distract Celeste Powell from the intense pain she experienced in physical therapy, due to ossification in her bones. "I do a lot of deep breathing exercises with Celeste and focus on singing and hitting at targets – in this case drums," Morrow says. "She recently became interested in the piano. In general, music lifts her mood and gets her motivated to work harder in physical therapy.

"There's so much new evidence about the brain's plasticity," she adds. "By engaging the whole brain to work on language, for instance, instead of only the areas where language originates, we can take advantage of that plasticity to form new pathways for speaking, thinking and moving." ◆

Memorial Hermann is particularly strong in brain injury, and the administrative component is teaching me skills that will ultimately help me run an inpatient brain injury unit."

Richard Huang, M.D.

Dr. Huang, who has developed an interest in interventional spasticity management using ultrasound-guided botulinum toxin injections, will finish his fellowship at the end of June 2012.

Ana Durand-Sanchez, M.D., was selected as TIRR Memorial Hermann's first brain injury research fellow, beginning in October of last year. Under the mentorship of Dr. Francisco and **Monika Shah, D.O.**, attending physician, Dr. Durand-Sanchez is conducting research related to neurorecovery, treatment of spasticity, unilateral versus bilateral motor training and cognitive deficits after brain injury, with a focus on blast injuries.

Ana Durand-Sanchez, M.D.

"In most fellowships one month of research is common," she says. "Getting two or three months is relatively rare. I'm getting six months of dedicated, clinically applicable research with a lot of continuity. The fellowship is extraordinary in the availability of teams to work with and projects to participate in or lead."

Dr. Durand-Sanchez won an award for best paper by a fellow at the 2012 meeting of the Association of Academic Physiatrists: "Does the non-impaired limb help the impaired limb during bilateral motor tasks in hemiparetic stroke patients?" When she finishes her fellowship in September 2012, Dr. Durand-Sanchez will join the clinical faculty at the Indiana University department of Physical Medicine and Rehabilitation. ◆

Strengthening the Weakened Voice

We use our voices to inform, persuade and connect with other people. An estimated 28 million Americans also rely on their voices to make a living, including singers, teachers, physicians, attorneys, ministers, nurses, salespeople and public speakers.

"Many of our clients have vocally intense occupations and may have overused their voices, resulting in a vocal nodule or other lesion," says **Cindy Bukauskas, C.C.C.-S.L.P.**, clinical coordinator of Speech-Language Pathology Services at TIRR Memorial Hermann Adult and Pediatric Outpatient Rehabilitation. "We're trained to provide treatment that strengthens the weakened voice and to teach new voice behaviors. Our first line of attack is to help our clients learn to change their communication patterns. Creating a more normalized voice pattern helps decrease strain on the vocal organs."

TIRR Memorial Hermann's outpatient speech pathologists also work with patients who have neurological conditions that weaken the voice, resulting in decreased loudness, pitch alterations and tremor. "Neurological conditions that can negatively affect the voice include degenerative diseases, stroke, traumatic brain injury and movement disorders that may impact the muscles that support the voice or the nerve supply to the muscles and vocal cords," she says. "For patients with Parkinson's disease, we offer the Lee Silverman Voice Treatment, which has been proven effective."

Referrals to the voice program come from otolaryngologists, neurologists, cardiologists, physical medicine and rehabilitation specialists and primary care physicians. Once referred, patients undergo evaluation that includes the function of the diaphragm, the abdominal and chest muscles that generate air pressure up through the vocal cords. Pitch and loudness level are measured, and the therapists note deviations like hoarseness, breathiness, pitch breaks, vocal straining, fatigue, weak voice and inability to project voice. They also observe the musculoskeletal pattern that patients use to produce voice.

Once referred, patients undergo evaluation that includes the function of the diaphragm, the abdominal and chest muscles that generate air pressure up through the vocal cords.

"Many patients have lived with their voice difficulties for weeks, months and even years before the evaluation and have developed maladaptive patterns that need to be addressed," Bukauskas says. "We work with them to decrease these behaviors and improve behaviors that support good vocal quality."

To refer a patient to the program, please call 713.524.9702. ◆

Balance and Vestibular Disorders Often Overlooked in Children

Vestibular disorders have long been recognized and treated in adults, who present with dizziness, vertigo, imbalance, gaze stability deficits or a feeling of disorientation to position in space. Now, new evidence suggests that vestibular deficits in children have been overlooked and underreported.

"We're just beginning to discover that long hospitalizations of children, especially in the early years, can affect the development of the vestibular system," says physical therapist **Jean Berliner, P.T., D.P.T., C.B.I.S.** "Children aren't typically screened for vestibular disorders, which can keep them from attaining developmental milestones by affecting reading acuity, motor development and balance. Vestibular exercises can help get them back on track and bring them up to the correct developmental level."

Patient on the Balance Master

While vestibular disorders can affect children with virtually any diagnosis, most children seen at TIRR Memorial

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Center at Houston (UTHealth) Medical School. "He was offered a research position at Memorial Hermann-Texas Medical Center by Dr. Grotta and has the highest regard for his work," she says. "Dr. Roekchai practiced and taught neurology in the United States for 17 years."

When she arrived in Houston, Kalis already had appointments with Dr. Grotta, as well as with neuro-ophthalmologist Rosa Tang, M.D.; Suzanne Wickum, O.D., clinical associate professor in the University of Houston department of Optometry and director of the Neuro-Optometric Rehabilitation Service; and **Lisa Lewis, O.T.R.**, an occupational therapist at TIRR Memorial Hermann Adult Outpatient Rehabilitation who treats patients with vision deficits. "It was funny," she says. "They all referred me to each other, but I had already made the appointments with each of them."

Dr. Grotta scheduled her for a cerebral angiogram to look for other weakened blood vessels. There were none. Dr. Tang examined her ocular system to ensure it was functioning properly, and it was. From there she went to TIRR Memorial Hermann Adult Outpatient Rehabilitation.

From mid-August 2011 through the end of November, she worked with Lisa Lewis and other therapists. "The typical patient we see has low-vision deficits as a result of neurological impairments related but not limited to traumatic brain injury, stroke, aneurysm, Parkinson's disease or multiple sclerosis," Lewis says. "We teach adaptive and compensatory strategies to help overcome their visual deficits. Our program is unique in that we offer low-vision therapy in conjunction with traditional occupational therapy and physical therapy."

When Kalis began working with Lewis, she could see only half of her world. She also had vestibular and speech deficits. "I was walking unsteadily," she says. "Lights bothered me, and I didn't have any depth perception. I couldn't see anything on the right half of both eyes, or across the bottom of my visual field."

"She came to us very fearful of moving around," Lewis says. "Through the process of natural healing and strategies we've taught, she can navigate her environment better. Her reading has improved dramatically. It was difficult for her to read, because there were spaces missing in the visual field. She's made a huge improvement. Life gets so much easier when you can see and protect yourself visually."

Kalis returned to Thailand for the month of December. By the time she left, Dr. Tang's examination showed that she had regained 95 percent of her vision in the right eye and 100 percent in the left. "Lisa is just amazing," Kalis says. "She was very creative in coming up with exercises that would make me stretch my eyes. She understood what I needed and tailored it exactly to me. I was able to read five books between August and December."

Kalis returned to TIRR Memorial Hermann in January 2012 for another month and a half of vision therapy. "The injury to my parietal lobe caused me to lose my visual memory and my ability to sequence words and letters," she says. "My visual memory is coming, coming, coming, but it's still not 100 percent there."

Kalis, who returned to Thailand in February, says she's very appreciative of TIRR Memorial Hermann. "It was hard for me to find a good program. The therapists at TIRR Memorial Hermann have all been so encouraging. I always left there feeling very positive. To watch all the patients there getting better together gave me a wonderful feeling." ◆

Barbara Kalis returned to her teaching position in mid-March.

Hermann Pediatric Outpatient Rehabilitation have deficits caused by traumatic brain injury, cerebral palsy, brain tumors or hearing loss. "Benign paroxysmal vertigo of childhood (BPVC) is a fairly common condition of unknown etiology that may have a genetic or familial link," Berliner says. "It often goes undiagnosed and treatment can significantly improve function."

New evidence suggests that vestibular deficits in children have been overlooked and underreported.

"Client history and symptoms guide the initial evaluation, and therapists consider the duration of symptoms, the duration of vertigo, how frequently the child experiences symptoms and the positions in which the symptoms occur," she says. "We use infrared goggles, pediatric balance and developmental assessments and other vestibular clinical tests, working closely with neurologists and otolaryngologists to develop the best treatment plan for the child."

The center also offers balance assessments and a variety of treatments for simple balance problems, including the SMART Equitest® Balance Manager, which allows clinicians to assess and treat specific sensory systems, as well as promoting motor planning strategies and movement patterns such as ankle, hip or stepping strategy. This comprehensive approach is combined into the child's plan of care, which may also include gaze stabilization, visual dependence exercises, otolithic recalibration exercises, somatosensory dependence exercises and ocular tracking exercises, as well as traditional gait and functional training to build confidence in daily activities.

For more information, please call 713.524.9702. ◆

ON THE MOVE

TIRR Memorial Hermann Welcomes Heather Taylor, Ph.D.

Heather Taylor, Ph.D., has joined the staff of TIRR Memorial Hermann as director of spinal cord injury research. In her new role, she will lead and build the SCI research program and conduct research on other physically disabling conditions, with an emphasis on both adult and pediatric patients.

Heather Taylor, Ph.D.

Dr. Taylor holds dual appointments at The University of Texas Health Science Center at Houston (UTHealth) Medical School. She is an adjunct associate professor in the department of Physical Medicine and Rehabilitation and an assistant professor in the department of Pediatrics, division of Developmental Pediatrics.

She received her doctorate in counseling psychology at the University of Houston in 2001, and completed a post-doctoral residency in health and rehabilitation psychology at Baylor College of Medicine. Prior to earning her degree, she completed a pre-doctoral residency in clinical neuropsychology at The University of Texas Medical Branch at Galveston.

Dr. Taylor has expertise in spinal disorders, including spina bifida and spinal cord injury. She has served as principal investigator or co-principal investigator on projects funded by the National Institutes of Health, National Institute of Neurological Disease and Stroke, National Institute on Disability and Rehabilitation Research, National Institute for Child Health and Development, Canadian Institute of Health Research and the UTHealth Medical School. She is the coauthor of more than 20 peer-reviewed journal articles that have appeared in the *Archives of Physical Medicine and Rehabilitation, Early Education and Development, Journal of the International Neuropsychological Society, Infant Behavior and Development, Journal of Psychopathology and Behavioral Assessment, Rehabilitation Psychology, Journal of Applied Developmental Psychology, Developmental Psychology* and *Women's Health Issues*, among others. ◆

Erigo Offers Effective Mobilization of Patients in Early Rehabilitation

Mobilization of neurological patients in the early phase of rehabilitation helps support their physical health and prevents secondary complications that can be caused by immobility. At TIRR Memorial Hermann, an advanced piece of equipment called the Erigo® has replaced the tilt table to initiate standing with patients. When the rehabilitation hospital acquired the Erigo in January, it became one of only a handful of facilities in the country offering patients a safer, more effective way to move from bed rest to standing.

"Patients with neurological injuries who are confined to bed for long periods of time tend to have orthostatic hypotension when they are moved to a standing position due to blood pooling in their lower extremities," says neurologic certified specialist **Julie Welch, P.T., N.C.S.** "Patients have to be re-adapted slowly to an upright position. With the Erigo we can get them upright and mobilized much faster."

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On the Move continued from page 7

Designed by Hocoma, the Erigo combines a continuously adjustable tilt table with a robotic stepping mechanism, enabling early intensive therapy. It combines three established therapies into one piece of equipment – verticalization of the patient through a 0- to 80-degree tilt range, intensive movement therapy, and cyclic loading and unloading of the lower extremities. A single therapist can operate the device.

When the rehabilitation hospital acquired the Erigo in January, it became one of only a handful of facilities in the country offering patients a safer, more effective way to move from bed rest to standing.

Benefits to patients include activation of the cardiovascular system, improvement of functioning of other organ systems, intensive sensory stimulation and reduced risk of secondary complications caused by immobility. The Erigo may also improve alertness in patients in a minimally conscious state.

"The addition of the stepping component while minimally conscious patients are in an upright standing position seems to increase arousal in these patients, and could improve their ability to follow commands," says **Diane Wege, P.T., N.C.S.**, program manager for the Brain Injury and Stroke Programs. "The technology meets a specific need of patient populations at TIRR Memorial Hermann by allowing patients with brain injury and spinal cord injury to progress to standing programs much more quickly than they would on a traditional tilt table. Currently, our experience with the device is anecdotal, but we plan to begin formal collection of data on outcomes."

Patient on Erigo

The Erigo complements other equipment available at TIRR Memorial Hermann, including the FES RT300 leg system, which allows patients to stimulate up to 10 muscle groups while cycling securely from a wheelchair to stimulate the legs and trunk; and the Armeo®, which accelerates rehabilitation by combining an adjustable arm support with a highly sensitive hand grip and motivating simulations of activities of daily living. The device provides gravity compensation for the impaired arm and allows patients to move successfully and improve residual neuromuscular control. ◆

Residents Host Rodeo Event

TIRR Memorial Hermann patients and their families enjoyed a day of festivities, food, live music, prizes, family fun and games when residents sponsored the hospital's first Rodeo Carnival, held just before the annual Houston Livestock Show and Rodeo kicked off in March.

"The rodeo is a major part of our culture in Houston," says **Sara Goel, M.D.**, a third-year resident and key organizer of the event. "We knew many of our patients and families would not be able to attend this year, so we decided to bring a rodeo to them."

Activities included a beanbag toss, face painting, volleyball, milk can toss, miniature golf, Texas Hold-Em Poker, a mock bull ride and a dunking booth, all held in the cafeteria and main gym.

The idea for the rodeo came to Dr. Goel early last fall, when she was rounding. "I saw a teenager with a brain injury who was depressed because she couldn't do what others could do. I thought that we as residents could do more to help our patients from a non-medical perspective by introducing something fun."

Carl Josehart, CEO, in the dunking booth

Activities included a beanbag toss, face painting, volleyball, milk can toss, miniature golf, Texas Hold-Em Poker, a mock bull ride and a dunking booth, all held in the cafeteria and main gym.

"It was a huge success," Dr. Goel says. "We got a lot of good feedback from patients, sponsors and administration, who were happy with the outcome. I hope it becomes an annual event." ◆

ACCOLADES

TBIMS Study Published in the *New England Journal of Medicine*

TIRR Memorial Hermann senior scientist, director of research and director of neuropsychology, **Mark Sherer, Ph.D.**, is a coauthor of a groundbreaking study on the effectiveness of amantadine in vegetative and minimally conscious states. The article, entitled "Placebo-controlled trial of amantadine for severe traumatic brain injury," appeared in the March 1, 2012, issue of the *New England Journal of Medicine*[1].

Mark Sherer, Ph.D.

> The study showed that daily doses of a drug we use to treat Parkinson's disease significantly improved function in severely brain-injured people thought to be beyond the reach of treatment.

The landmark, National Institute on Disability and Rehabilitation Research-funded Traumatic Brain Injury Model Systems Collaboratives grant study was reported on in articles that appeared in the *New York Times* and the *Washington Post*.

"The study showed that daily doses of a drug we use to treat Parkinson's disease significantly improved function in severely brain-injured people thought to be beyond the reach of treatment," Dr. Sherer says. "While improvements were modest, they were meaningful. We're hoping our findings will be a turning point in the understanding and treatment of people with severe traumatic brain injuries."

[1]Giacino JT, Whyte J, Bagiella E, Kalmar K, Childs N, Khademi A, Eifert B, Long D, Katz DI, Cho S, Yablon SA, Luther M, Hammond FM, Nordenbo A, Novak P, Mercer W, Maurer-Karattup, Sherer M. Placebo-controlled trial of amantadine for severe traumatic brain injury. *New England Journal of Medicine*, 1 March 201v2; 366:819-826.

Cindy B. Ivanhoe, M.D., has been invited to serve on the International Neurotoxin Association Clinical Subcommittee for the Toxins 2012 meeting to be held in Miami Beach, Florida, December 5-8. The committee will oversee and structure clinical courses for the Toxins meeting, which will be the first gathering of the International Neurotoxin Association.

Cindy Ivanhoe, M.D.

Cindy Bukauskas, C.C.C.-S.L.P., recently achieved certification in the McNeil Dysphagia Therapy Program (MDTP) and is now offering the program to her adult dysphagia patients. She is one of two certified MDTP therapists in Houston and four in Texas. A cutting-edge, evidence-based dysphagia therapy, MDTP is a systematic exercise-based approach to swallowing therapy that provides a framework within which to create an individualized swallowing rehabilitation program. ◆

IN PRINT

ARTICLES

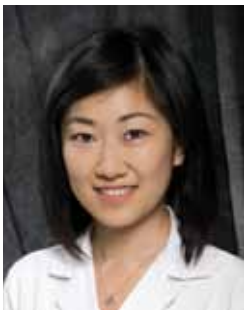
DiTommaso C, Berliner J, Cruz D, Wenzel LR. Diaphragmatic pacing and protocol with locked-in syndrome. *Physical Medicine and Rehabilitation*, February 2012. Vol 4:152-153.

Craig DiTommaso, M.D.

Giacino JT, Whyte J, Bagiella E, Kalmar K, Childs N, Khademi A, Eifert B, Long D, Katz DI, Cho S, Yablon SA, Luther M, Hammond FM, Nordenbo A, Novak P, Mercer W, Maurer-Karattup, **Sherer M.** Placebo-controlled trial of amantadine for severe traumatic brain injury. *New England Journal of Medicine*, 1 March 2012; 366:819-826.

Ifejika-Jones NL, Harun N, Peng H, Noser EA, Grotta JC, **Francisco GE.** The Interaction of aspiration pneumonia with demographic and cerebrovascular disease risk factors is predictive of discharge level of care in the acute stroke patient. *American Journal of Physical Medicine and Rehabilitation*; 91:141-147, 2012

Nakase-Richardson R, Whyte J, Giacino JT, Pavawalla S, Barnett SD, Yablon SA, **Sherer M**, Kalmar K, Hammond FM, Greenwald B, Horn LJ, Seel R, McCarthy M, Tran J, Walker WC. Longitudinal outcome of unresponsive patients in the TBI Model Systems Program. *Journal of Neurotrauma*, 2012; 29:59-65.



Michelle Pu, M.D.

Amruta Ashtekar, M.D.

Pu Y-W, Ashtekar A. Migraine Headache. Published in Knowledge Now, the American

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ON THE PODIUM

Cruz D. Application of diaphragmatic stimulation for a patient with pontine ischemia. Poster presentation at the Open Forum of the 57th Association for Respiratory Care Congress, Tampa, November 2011.

Darby Cruz, R.R.T., B.S.R.T.

De Joya AL. Mobility and balance diagnostic classification system for neurological physical therapy. Poster presentation at the 2012 American Physical Therapy Association Combined Sections Meeting in Chicago.

Durand-Sanchez A, Chang S-H, **DiTommaso C, Li S.** Does the non-impaired limb help the impaired limb during bilateral motor tasks in hemiparetic stroke patients? Presented at the Association of American Physiatrists (AAP) annual meeting, Las Vegas, March 2012, and winner of the AAP Best Paper Award.

Elms E. Presented the Texas Disability Technology Initiative (TDTI), a project headed by **Lex Frieden**, at the Pacific Rim International Conference on Disability and Diversity, Honolulu, March 2012. Dr. Elms was also invited to present TDTI research findings to disability community leaders, legislators, vendors and the general public on March 30, at an event organized by the Assistive Technology Resource Centers of Hawaii.

Edward Elms, M.D.

Lex Frieden

Francisco, GE. Moderated a panel discussion at the Neuroscience Research Center's 17th Annual Public Forum, "Rehabilitation," held in January 2012 in Houston. **Jeffrey Berliner, D.O.**, **Corwin Boake, Ph.D.**, and TIRR Memorial Hermann collaborator Marsha O'Malley, Ph.D., associate professor in the department of Mechanical Engineering and Materials Science at Rice University and a co-founder of Houston Medical Robotics, also participated.

Corwin Boake, Ph.D.

Hampton S, **Li S.** Quantification of effort during isometric finger force production using the Borg Scale. Presented at the American Academy of Physiatrists annual meeting, Las Vegas, March 2012.

Pappadis MR. Am I still the same

IN THE NEWS

TIRR Memorial Hermann Hotwheels and Houston Rollin' Warriors were showcased during a half-time exhibition of the Rockets vs. Timberwolves game on Wheelchair Basketball Night, NBA.com, Feb. 17.

Former TIRR Memorial Hermann patient Nicholas Tijerina and his family were special guests at a Houston Rockets game, received a behind-the-scenes tour and met with players. *KRGV-TV, Fox Sports Houston, MVP Texas, Clutch Fans, Feb. 19.*

Jackson Pierce, an outpatient, was born with bilateral tibial hemimelia – partial or total absence of the tibia or shinbone – causing his legs to turn inward. Only 2 years old, Jackson works with a therapist three days a week at TIRR Memorial Hermann's Pediatric Rehabilitation program and continues therapy at home with his family. *KPRC Channel 2, Feb. 22.*

Patient, Nicholas Tijerina shoots hoops with Houston Rockets forward-center, Luis Scola

Following a stroke, ABC 13's Tim Melton has been off the air since October 2011. He checked in with his audience and thanked his family and the medical staff at TIRR Memorial Hermann for walking with him through each step of his recovery and rehabilitation. *ABC Channel 13 KTRK, March 1.*

Jersey Village High School senior Kaitlyn Eaton has earned enough attention on the court to join the University of Illinois wheelchair basketball team next season. She plays for the **TIRR Memorial Hermann Hotwheels**, ranked second in the nation. *Fox Sports Houston, March 8.* ◆

person?: Psychosocial adjustment to traumatic brain injury. Presented at the 2011 Social Work Research Conference, University of Houston, December 2011.

Monique R. Pappadis, M.Ed., C.H.E.S.,C.C.R.P.

Pappadis MR, **Sander AM**, **Mazzei DM**. Soy diferente: Experiences of Spanish-speaking persons with traumatic brain injury. Abstract for poster presentation at the 2012 Race, Ethnicity and Disabilities: State of the Science Conference, Arlington, Virginia, March 2012.

Diana Mazzei, M.A., L.P.C.

Roebuck ST, **Sherer M**. Predicting outcome after TBI: Translating empirical findings into clinical practice. Course taught at the Annual Meeting of the National Academy of Neuropsychology, Marco Island, Florida, November 2011.

Li S. Shuo-Hsiu C, **Francisco GE**, **Verduzco-Gutierrez M**. Spasticity: Brainstem mechanisms and relation to stages of motor recovery after stroke. Presented at the Association of Academic Physiatrists meeting, Las Vegas, March 2012.

Sheng Li, M.D., Ph.D.

Szot L, **Tseng E**, **Seale J**, **De Joya A**. Development of evidence-based decision-making algorithms for balance and gait outcomes measures. Poster presentation at the 2011 Texas Physical Therapy Association (TPTA) Annual Conference, The Woodlands, Texas, October 2011, and winner of the TPTA Annual Conference Poster Presentation Award. Also presented at the 2012 American Physical Therapy Association Combined Sections Meeting in Chicago.

Hale J, **Seale J**. Translating evidence to practice: Development of a task-specific circuit training group for individuals with acquired brain injury in a community re-entry program. Poster presentation at the 2011 Texas Physical Therapy Association (TPTA) Annual Conference, The Woodlands, Texas, October 2011, and at the 2012 American Physical Therapy Association Combined Sections Meeting in Chicago. ◆

Jennifer Hale, P.T., D.P.T., N.C.S.

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Academy of Physical Medicine and Rehabilitation online educational database, November 2011.

Yozbatiran N, Berliner J, O'Malley MK, Pehlivan AU, Kadivar Z, **Boake C, Francisco GE**: Robotic training and clinical assessment of upper extremity movements after spinal cord injury: A single case report. *Journal of Rehabilitation Medicine* 2012; 44:186-88.

Jeffrey Berliner, D.O.

BOOK CHAPTERS

Sander AM, Clark AN. Re-connecting with relationships and community activities after brain injury. In Fraser RT, Johnson KL, Bell KR (Eds.) *Living Life Fully After Brain Injury: A Workbook for Survivors, Families and Caregivers.* Youngsville, North Carolina: Lash & Associates Publishing/Training, Inc., 2011.

Allison Clark, Ph.D.

Sander AM. Sexuality after traumatic brain injury. In Zollman FS. (Ed.) *Manual of Traumatic Brain Injury Management*. New York: Demos Publishing, 2011, pp. 277-282.

Roebuck-Spencer T, **Sherer M**. Moderate and severe traumatic brain injury. In G. Larrabee (Ed.). *Forensic Neuropsychology: A Scientific Approach 2nd Ed* (pp. 260-280) 2012. New York: Oxford University Press, Inc. ◆

Angelle Sander, Ph.D.

Memorial Hermann Healthcare System

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MESSAGE FROM THE CMO

TIRR Memorial Hermann's reputation is based on 50 years of experience in rehabilitation and research, the excellence of our affiliated physician partners and clinical staff, and our comprehensive programs and services. Our reputation is also based on our longstanding history as a major training site for physical medicine and rehabilitation specialists, rehabilitation nurses and therapists. We count among our past residents and fellows men and women who are now leading academic departments across the country.

Gerard E. Francisco, M.D., CMO

The diversity and severity of the conditions we treat make TIRR Memorial Hermann an obvious choice for residents and fellows, who also come to us because of our commitment to leading quality, performance improvement and change. Each of our residents participates in a yearlong quality-improvement project, the results of which are presented formally at the end of the academic year.

Among those who helped organize these projects is our chief resident for research and quality improvement, Ameet Nagpal, M.D., who helps ensure that our physiatrists in training are prepared for the new demands of healthcare. Last year, CEO Carl Josehart generously agreed to fund two new brain injury fellowships, one of which has a strong focus on rehabilitation administration. When Richard Huang, M.D., was selected last year as our first brain injury administrative fellow, he became one of the first physical medicine and rehabilitation fellows in the country to participate actively in senior-level decision-making. The fellowship is just one of our many efforts to ensure that hospitals and their affiliated physicians are more closely aligned in healthcare delivery – and better prepared for the future.

Gerard E. Francisco, M.D.
Chief Medical Officer
TIRR Memorial Hermann
Chair, Department of Physical Medicine and Rehabilitation
The University of Texas Health Science Center at Houston (UTHealth) Medical School

About TIRR Memorial Hermann

TIRR Memorial Hermann is a 119-bed nonprofit rehabilitation hospital located in the Texas Medical Center in Houston. Founded in 1959, TIRR Memorial Hermann has been named one of "America's Best Hospitals" by *U.S.News & World Report* for 22 consecutive years. TIRR Memorial Hermann provides rehabilitation services for individuals with spinal cord injuries, brain injuries, strokes, amputations and neuromuscular disorders.

TIRR Memorial Hermann is one of 12 hospitals in the not-for-profit Memorial Hermann system. An integrated healthcare system, Memorial Hermann is known for world-class clinical expertise, patient-centered care, leading-edge technology and innovation. The system, with its exceptional medical staff and more than 20,000 employees, serves Southeast Texas and the Greater Houston community.

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