

SPRING 2013

IN THIS ISSUE

2 MESSAGE FROM THE CMO

FEATURES

- 1 Breathing-controlled Electrical Stimulation for Management of Neuropathic Pain and Spasticity
- 6 New Clinical Trial to Evaluate the Effectiveness of Acceptance and Commitment Therapy in Persons with TBI
- 7 TIRR Memorial Hermann Teams Up with the Children's Learning Institute to Enhance Early Development for Infants with Disabilities
- 8 Strength Unlimited: A Community-based Program Provides an Enriched Environment for People with Disabilities
- 9 A Young Boy Benefits from Rehabilitation Following Treatment for Glioblastoma Multiforme

PERSPECTIVES ON RESEARCH

- 4 Post-traumatic Confusional State: A Re-conceptualization of the Early Period of Recovery after Traumatic Brain Injury

ON THE MOVE

- 11 Lex Frieden Recognized Among Nine Leaders in the Global Disability Community
- 12 TIRR Memorial Hermann Welcomes New Recruits
- 13 IN PRINT
- 13 ON THE PODIUM
- 15 ACCOLADES
- 16 MESSAGE FROM THE CEO

Breathing-controlled Electrical Stimulation (BreEStim) for Management of Neuropathic Pain and Spasticity

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



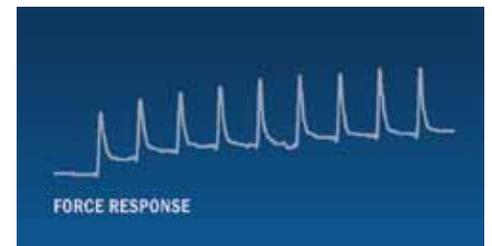
Sheng Li, M.D., Ph.D.

Electrical stimulation therapy, which uses small electrodes to send electrical currents through the skin to target certain muscle groups, has a broad range of applications in rehabilitation to achieve functional and therapeutic goals, from spasm relaxation to pain management. Based on recent discoveries about the systemic effects of voluntary breathing and the physiological interactions among body systems during voluntary breathing, my TIRR Memorial Hermann colleagues and I invented the BreEStim protocol to augment the effects of electrical stimulation in patients with neuropathic pain and spasticity. In BreEStim, a single-pulse electrical stimulus is triggered and delivered to the target area when the air flow rate of each individual breath reaches a certain threshold.

The protocol is grounded in the distinction between autonomic or reflexive breathing, as in sleep, and voluntary breathing, as used for speech. To talk or sing, humans voluntarily suppress autonomic breathing by activating the cortical respiratory center of the brain. These same cortical and subcortical

areas that are activated during voluntary breathing are also involved with muscle tone, posture, mood, pain, speech and other functions. Using this knowledge, we discovered interactions between the respiratory and motor systems, specifically a finger extension-inspiration coupling.

In a video article published online, I presented two example cases showing different applications of BreEStim in the clinical setting: management of post-stroke finger flexor spasticity and neuropathic pain in a spinal cord injury patient.



In the post-stroke spasticity management case, a 69-year-old male patient with right hemiplegia secondary to a stroke suffered 22 months earlier underwent a 30-minute BreEStim session involving the finger extensors. When we first saw

BreEStim continues on page 3

FEATURED IN THIS ISSUE

David Arciniegas, M.D.

Senior Scientist and Medical Director for Brain Injury Research, TIRR Memorial Hermann
Executive Director of the Beth K. and Stuart C. Yudofsky Division of Neuropsychiatry and Professor, Menninger Department of Psychiatry and Behavioral Sciences, Baylor College of Medicine

Glendaliz Bosques, M.D.

Chief of Pediatric Rehabilitation Medicine, TIRR Memorial Hermann and Children's Memorial Hermann Hospital
Assistant Professor of PM&R, UTHealth Medical School

Victor H. Chang, M.D.

Clinical Director, Brain Injury and Stroke Program, TIRR Memorial Hermann
Associate Professor of PM&R, UTHealth Medical School

Alison Clark, Ph.D.

Investigator, Brain Injury Research Center, TIRR Memorial Hermann

Anna De Joya, P.T., D.Sc., N.C.S.

Coordinator of Strength Unlimited and Director of the Neurological Physical Therapy Residency Program, TIRR Memorial Hermann

Lex Frieden

Director, Independent Living Research Utilization
Professor of Biomedical Informatics and Professor of Rehabilitation, UTHealth Medical School
Professor of Rehabilitation, Baylor College of Medicine

Mansi Jhaveri, D.O.

Attending Physician, Memorial Hermann-Texas Medical Center
Assistant Professor of PM&R and Neurology, UTHealth Medical School

Sheng Li, M.D.

Postgraduate Year 5 Resident
PM&R/Clinical Investigator Pathway

Kacey Maestas, Ph.D.

Investigator, Brain Injury Research Center, TIRR Memorial Hermann

Laura Martin, P.T., D.P.T., N.C.S.

Physical Therapist

Angelle Sander, Ph.D.

Director, Brain Injury Research Center, TIRR Memorial Hermann
Associate Professor of PM&R, Baylor College of Medicine

Mark Sherer, Ph.D., A.B.P.P., F.A.C.R.M.

Senior Scientist and Director of Research, TIRR Memorial Hermann
Clinical Professor, Department of PM&R, Baylor College of Medicine

Heather Taylor, Ph.D.

Director for Spinal Cord Injury Research, TIRR Memorial Hermann
Assistant Professor of Pediatrics, UTHealth Medical School

MESSAGE FROM THE CMO

In the mid-1990s, I coauthored an article in the *American Journal of Physical*



Gerard E. Francisco, M.D., CMO

Medicine and Rehabilitation in which we presented the results of a survey of 100 physiatrists and 100 physical medicine and rehabilitation residents across the country regarding the role

of physiatry as a primary care specialty. More than half of those surveyed believed that physiatrists should provide primary care to the severely disabled. Recently, we surveyed 339 traumatic brain injury patients who were inpatients at TIRR Memorial Hermann between 1999 and 2007, to assess their perception of access to quality primary care in the community. They expressed concern that primary care physicians were not trained to accommodate their cognitive issues, the implications of their disabilities and their need for assistance.

Despite this and related research, the presence of a medical home in a rehabilitation hospital remains uncommon. In response to feedback from our patients

about the unavailability of affordable, accessible, high-quality primary care for people with disabilities in our community, TIRR Memorial Hermann became a leader in the movement to redefine the primary care model by providing an outpatient medical home for people with disabilities.

Our Outpatient Medical Clinic is a physician-based facility designed to meet the needs of individuals with disabilities who require initial or continuing care by a physician. We offer access to specialties not normally found in a rehabilitation hospital - gynecology, urology, cardiology, psychiatry, cognitive behavioral therapy, neurology, neurosurgery, sleep medicine, podiatry and, beginning this summer, dentistry - as well as outpatient treatment for brain injury, stroke and spinal cord injury patients. We also house one of the nation's leading spasticity management programs.

Patients who have not had well-woman examinations because they feel uncomfortable in the traditionally equipped gynecologist's office are finding the care they need. Others with language difficulties resulting from brain injury find outstanding specialized and subspecialized medicine delivered by

CMO Message continues on page 15

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.

Carl E. Josehart, CEO

Gerard Francisco, M.D.
Chief Medical Officer

Mary Ann Euliarte, R.N., M.S.N., M.B.A., C.R.R.N.
Chief Nursing Officer / Chief Operations Officer

Mark Sherer, Ph.D., A.B.P.P., F.A.C.R.M.
Director of Research

Susan Thomas, Editor

Karen Kephart, Writer

Steve Stanley, Designer

Material in this publication may not be reproduced in whole or part without permission from TIRR Memorial Hermann.

Spring 2013

We have opportunities for outstanding rehabilitation professionals. If you are interested in joining our team at U.S. News & World Report's No. 3 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.tirr.memorialhermann.org, www.ilru.org

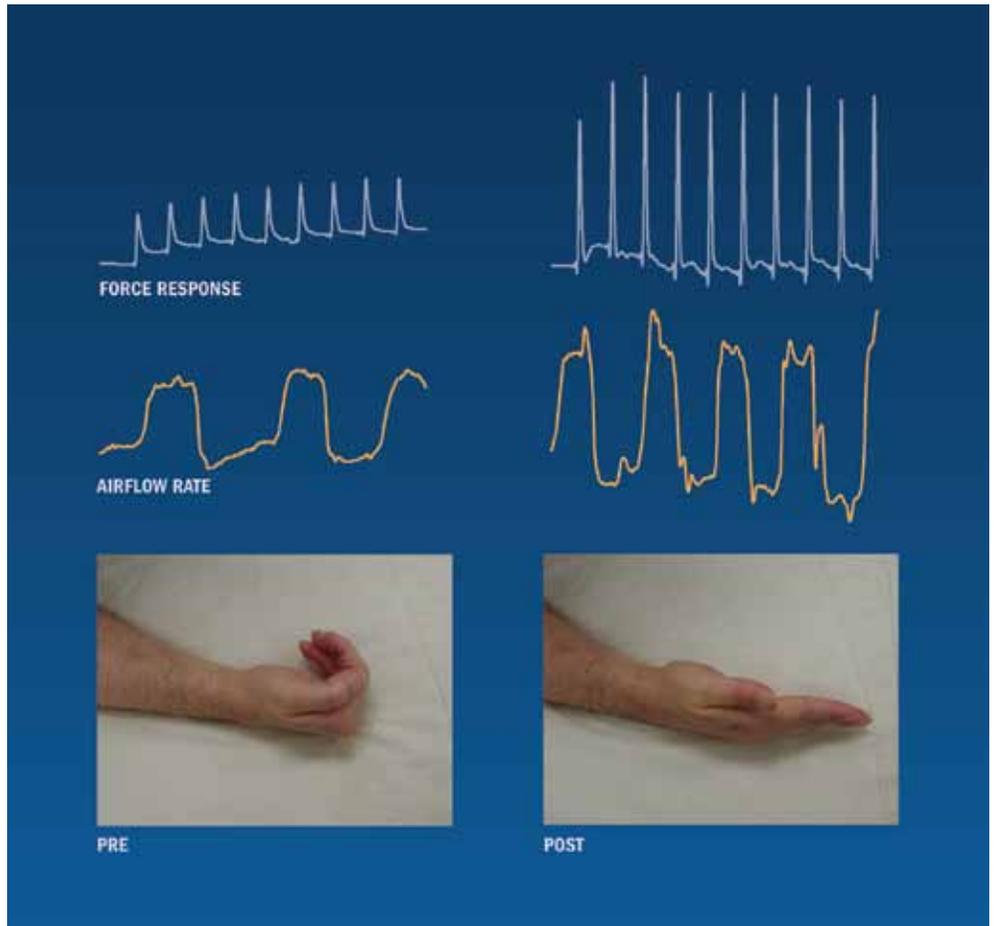
BreEStim continued from page 1

him, he had weakness on the right side but could walk independently. He had moderate finger flexor spasticity and residual voluntary finger extension with limited range of motion in his right metacarpophalangeal joints. He was unable to open his hand and fingers sufficiently for functional use. Immediately after the treatment, his finger flexor spasticity decreased to minimum, and his voluntary finger extension returned to nearly normal. He could cut meat with a knife and button shirts using his impaired hand, and he retained the movement he recovered during follow-up visits for at least eight weeks.

In the neuropathic pain management case, a 40-year-old man who suffered a T8 ASIA A spinal cord injury more than four years earlier complained of neuropathic pain at the injury level. We administered one session of EStim per day for five consecutive days, waited one week, then treated him with one session of BreEStim for five consecutive days. He tolerated both interventions well, and BreEStim had a greater effect on reduction of pain.

The study is an excellent example of translational research that can be put to clinical use quickly and effectively with functional outcomes. Ours was the first study to investigate the underlying mechanism between the respiratory and motor systems, and at the same time explore clinical applications. If our ongoing clinical studies prove the efficacy of BreEStim, clinicians will be able to apply BreEStim for spasticity and neuropathic pain management. ♦

*A researcher at TIRR Memorial Hermann, Sheng Li, M.D., Ph.D., started investigating the connection between voluntary breathing and movement before he began his physical medicine and rehabilitation residency at the UTHealth Medical School in 2009. Since then, he has coauthored research articles that have appeared in the *Journal of Neurophysiology*¹, *Motor Control*² and *Journal of Pain Research*³, and was recently invited by the *Journal of Visualized Experiments*⁴*



to publish a video article on his work with a new electrical stimulation protocol called breathing-controlled electrical stimulation (BreEStim). Dr. Li currently is conducting his research in the UTHealth PM&R Motor Recovery Laboratory at TIRR Memorial Hermann, supported by a National Institutes of Health (NIH) R01 grant he brought with him to the Medical School. The grant allows him to have protected time for research during his physical medicine and rehabilitation residency training on UTHealth's Clinical Investigator Pathway. On completion of his residency in July 2013, he will join TIRR Memorial Hermann as an attending physician in the Outpatient Medical Clinic and director of the Neurorehabilitation Research Laboratory in the new TIRR Memorial Hermann Research Center, where he will conduct further research on clinical applications of BreEStim. To view the abstract and video online, visit www.jove.com/video/50077/breathing-controlled-electrical-stimulation-breestim-for-management.

¹Li S, Rymer WZ. Voluntary Breathing Influences Corticospinal Excitability of Nonrespiratory Finger Muscles. *J Neurophysiol* 2011;105:512-521.

²Li S, Park WH, Borg AM. Phase-dependent respiratory-motor interactions in reaction time tasks during rhythmic voluntary breathing. *Motor Control* 2012;16:493-505.

³Li S, Melton DH, Berliner JC. Breathing-controlled electrical stimulation could modify the affective component of neuropathic pain after amputation: A case report. *J Pain Res* 2012;5:71-75.

⁴Li S. Breathing-controlled Electrical Stimulation (BreEStim) for Management of Neuropathic Pain and Spasticity. *J Vis Exp* 2013;71:e50077, doi:10.3791/50077.

Post-traumatic Confusional State: A Re-conceptualization of the Early Period of Recovery after Traumatic Brain Injury

By Mark Sherer, Ph.D., A.B.P.P., F.A.C.R.M.



Mark Sherer, Ph.D.

Persons with moderate or severe traumatic brain injury (TBI) who have emerged from coma, vegetative state and/or minimally conscious state experience a transitional period

of neurologic recovery that has traditionally been referred to as post-traumatic amnesia (PTA). The *INS Dictionary of Neuropsychology*¹ defines PTA as “a period of anterograde amnesia in which new memories cannot be consistently made and recalled that follows recovery of consciousness in head injury or other neurological trauma (p 129).” As suggested by this definition, many have focused on the nature of the memory impairment and other cognitive impairments shown by persons in PTA when investigating or clinically assessing these patients. However, as those working directly with patients in acute care or rehabilitation centers are keenly aware, the early period of recovery after TBI is characterized by a wide range of neurobehavioral disturbances beyond memory impairment. These disturbances include disorientation, agitation, sleep disturbance, impulsivity, poor safety judgment and others. These behavioral issues often have a greater impact on early management on the rehabilitation unit than the co-occurring memory impairments, as these problems affect patient safety as well as staff safety.

Several years ago, Stuss and colleagues² conducted a comprehensive assessment of cognitive functioning of persons in PTA after TBI. Using a wide range of

cognitive tasks, they showed that the primary cognitive deficit shown by these patients was in the ability to focus, maintain and shift attention. These investigators noted the similarity of this early phase of recovery to delirium and proposed that the term PTA be replaced by a new term: post-traumatic confusional state (PTCS).

My collaborators Stuart A. Yablon, M.D., and Risa Nakase-Richardson, Ph.D., and I began a research program on PTCS in 1998, one year before the Stuss and colleagues’ article was published. Based on several investigations, we have come to view PTCS as a subtype of delirium. Delirium is a transitional state of neurologic functioning characterized by disturbed consciousness, generalized cognitive impairment, psychomotor disturbances, sleep/wake cycle disruption and fluctuation in clinical presentation.³ Delirium has many causes, including acute metabolic disturbance, intoxication and structural brain lesions. Delirium is particularly common in elderly persons for whom pre-existing dementia is a key risk factor and for whom a variety of medical issues such as dehydration, exposure to anesthesia, etc., can provoke episodes of delirium. While some have argued that all delirium share a common neurochemical pathway,⁴ we believe that persons with delirium from various causes likely have different underlying neurostructural and neurophysiologic causes, different courses of recovery and different long-term prognoses. For this reason, we have engaged in a program of research designed to enhance understanding of delirium in early recovery from TBI. As suggested by Stuss and colleagues, we prefer the term PTCS to distinguish this delirium from delirium due to other causes.

An initial step in our program of

research was to develop the Confusion Assessment Protocol (CAP).⁵ The CAP is a combination of items from previously published scales and complete scales that have been shown to be useful in previous investigations of PTA and delirium. We developed a new methodology for scoring these items and combining the scores to provide assessment of seven key symptoms of PTCS and to provide clear diagnostic criteria for determining whether a patient is in PTCS or has emerged from PTCS. The seven key symptoms of PTCS are shown in Table 1 and the typical phenomenology of persons with TBI who are in PTCS as compared to those who are not in PTCS is shown in Figure 1. As the figure shows, there is overlap in symptoms experienced by confused and non-confused patients in early recovery from TBI. The differences are in some ways qualitative so that non-confused patients are almost never disoriented and almost never show psychotic-type symptoms. However, other differences are more quantitative so that confused and non-confused patients both show cognitive impairment and fluctuation, but these symptoms are generally more severe in confused patients. From a rehabilitation perspective, key distinctions are the greater ability of non-confused patients to actively participate in treatment and the decreased safety risk posed by non-confused as compared to confused patients.

Our subsequent studies have shown that severity of confusion at a set time post-injury makes a significant contribution to prediction of eventual patient outcomes.⁶ This finding was important, as previous investigations had focused on the duration of disorientation after TBI as a prognostic indicator, without ever examining the prognostic significance

of severity of confusion. In addition, we have shown that different patients have different patterns of symptoms when they are confused and that symptoms of confusion tend to resolve in a predictable order.⁷ So psychotic symptoms and sleep/wake disturbances recover earliest post-injury while fluctuation in functioning and disturbance of attentional functions are the most persistent impairments associated with PTCS. In retrospect, these findings make clinical sense as so-called vegetative functions of the brain, such as maintenance of adequate arousal, are basic to any neurobehavioral functioning, while the ability to maintain similar levels of function across situational stresses requires complex regulation of behavior.

An additional novel contribution of our program of research concerns the importance of psychotic-type symptoms in patients in PTCS. In our research on this issue, we used a broad definition of psychotic-type symptoms, including mild perceptual problems such as not being able to distinguish dreams from reality and suspiciousness, all the way up to frank hallucinations or delusions. We were surprised to find that about 40 percent of confused patients had psychotic-type symptoms.⁶ While this incidence seems high, it is consistent with the incidence of psychotic symptoms in patients with delirium due to other causes.⁸ We found that presence of psychotic-type symptoms

at any time during the rehabilitation stay put patients at risk for poor outcomes at one year post-injury even though the psychotic-type symptoms were transient symptoms that resolved in all patients.⁹

We are continuing with new investigations to learn more about the structural lesions associated with psychotic-type symptoms and with persistent confusion in persons with TBI. Next steps in our research program will be efforts to determine the brain structures and/or pathways that, when injured, play key roles in confusion, and to conduct trials of interventions intended to decrease the duration of the confused state.

For additional information on the Confusion Assessment Protocol that we have used in our research on PTCS, visit the Center on Outcome Measurement in Brain Injury website at www.tbims.org/combi/ or contact me at mark.sherer@memorialhermann.org. ♦

References

- ¹Loring DW, ed. *INS Dictionary of Neuropsychology*. New York: Oxford; 1999:129.
- ²Stuss DT, Binns MA, Carruth FG, Carruth FG, Levine B, Brandys CE, et al. The acute period of recovery from traumatic brain injury: Posttraumatic amnesia or posttraumatic confusional state? *J Neurosurg* 1999;90:635-43.
- ³American Psychiatric Association. *Diagnostic and Statistical Manual of*

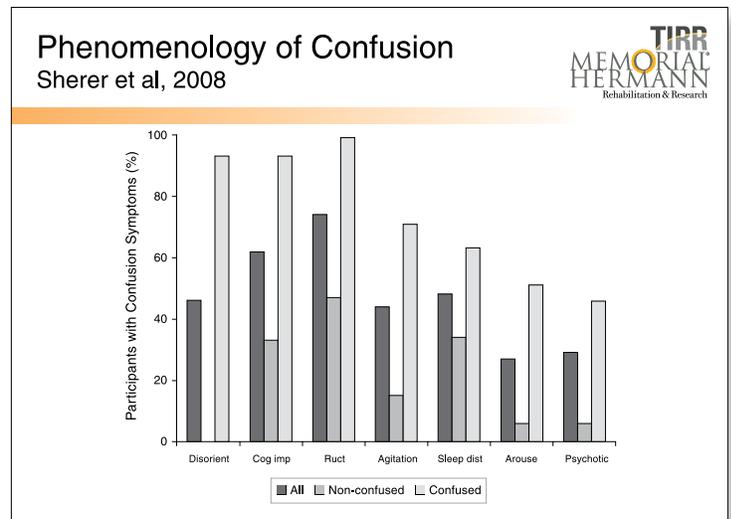
Mental Disorders, 4th ed. Washington, DC: American Psychiatric Press; 1994.

- ⁴Trzepacz PT. Is there a final common neural pathway in delirium? Focus on acetylcholine and dopamine. *Semin Clin Neuropsychiat* 2000;5:132-48.
- ⁵Sherer M, Nakase-Richardson R, Yablon SA, Gontkovsky ST. Multidimensional assessment of acute confusion after TBI. *Arch Phys Med Rehabil* 2005; 86:896-904.
- ⁶Sherer M, Yablon SA, Nakase-Richardson R, Nick T. Effect of Severity of Posttraumatic Confusion and its Constituent Symptoms on Outcome after Traumatic Brain Injury. *Arch Phys Med Rehabil* 2008;89:42-7.
- ⁷Sherer M, Yablon SA, Nakase-Richardson R. Patterns of recovery of post-traumatic confusional state in neurorehabilitation admissions after TBI. *Arch Phys Med Rehabil* 2009;90:1749-54.
- ⁸Meagher DJ, Moran M, Raju B, Gibbons D, Donnelly S, Saunders J, et al. Phenomenology of delirium: Assessment of 100 adult cases using standardized measures. *Brit J Psychiatr* 2007;190:135-41.
- ⁹Sherer M, Yablon SA, Nick TG. Psychotic symptoms as manifestations of the Posttraumatic Confusional State: Prevalence, risk factors, and association with outcome. *J Head Trauma Rehabil*, in press.

Table 1

Phenomenology of Post-Traumatic Confusional States, Sherer et al, 2005	
	
<ul style="list-style-type: none"> • Disorientation • Cognitive impairment (attention, vigilance, mental control [working memory]) • Fluctuation of symptom severity • Agitation • Nighttime sleep disturbance • Decreased daytime arousal • Psychotic-type symptoms 	

Figure 1



A New Clinical Trial Will Evaluate the Effectiveness of Acceptance and Commitment Therapy in Persons with TBI

When TIRR Memorial Hermann's Brain Injury and Stroke Program was re-designated a Traumatic Brain Injury Model System (TBIMS) last fall by the National Institute on Disability and Rehabilitation Research, the program received a \$2.2 million federal grant, a portion of which will fund a local clinical trial of a promising psychotherapy intervention for people with traumatic brain injury (TBI).

The study, led by principal investigator **Angelle Sander, Ph.D.**, director of the Brain Injury Research Center (BIRC) at TIRR Memorial Hermann, is a novel innovative preliminary investigation of the effectiveness of acceptance and commitment therapy (ACT) for reducing emotional distress, improving health-related quality of life and increasing participation in the community for persons with TBI. If the study is successful, it will provide a foundation for future multicenter comparative effectiveness trials in which ACT can be evaluated in comparison to traditional cognitive behavioral therapy and psychotropic medications.

Dr. Sander and her co-investigators believe that cognitive behavioral therapy, which is commonly used to treat depression after TBI, may not be as effective for persons with TBI as acceptance and commitment therapy, which focuses on accepting negative thoughts and experience and moving beyond them to commit to goals that are realistically achievable.

"Emotional distress in the form of depression and anxiety is common after TBI and has been shown to reduce overall productivity, impede return to work and lower quality of life," says Dr. Sander, who is an associate professor in the Baylor College of Medicine department of Physical Medicine and Rehabilitation

and an adjunct clinical professor in the University of Houston department of Psychology. "The few studies that have been done on how to treat depression and anxiety after TBI have produced mixed results."

Dr. Sander and her co-investigators believe that cognitive behavioral therapy, which is commonly used to treat depression after TBI, may not be as effective for persons with TBI as acceptance and commitment therapy, which focuses on accepting negative thoughts and experience and moving beyond them to commit to goals that are realistically achievable.

"Cognitive behavioral therapy focuses on identifying sad or irrational thoughts and replacing them with more rational ways of thinking, but people with TBI have experienced a catastrophic life event and their feelings of sadness are justified," says study co-investigator **Mark Sherer, Ph.D., A.B.P.P., F.A.C.R.M.**, senior scientist and director of research at TIRR Memorial Hermann and a clinical professor in the department of Physical Medicine and Rehabilitation at Baylor College of Medicine. "The fact that individuals with TBI are cognitively impaired gives us reason to think that talk therapies, which rely on cognition, may be challenging for them. What's attractive to me about acceptance and commitment therapy is its consistency with the rehabilitation way of thinking. Many people in rehabilitation have problems that can't be overcome, which require acceptance. At some point, they have to decide to move forward with their lives despite their physical limitations. ACT takes the position that regardless of your thought patterns, there are still important things to accomplish in life. It takes them beyond struggling against those feelings and focuses them on acceptance and finding new meaning. That feeling of accomplishment - and the understanding that it is possible to move on - helps diminish

the impact of the disability, making it less overwhelming. ACT resonates with me in terms of my experience in working with patients over the years."

The study will enroll 134 participants, half of whom will be randomized to receive eight weeks of ACT. The remaining half will be assigned to a control group, assessed by a neuropsychologist and referred to a psychiatrist for counseling or medication.

"We are also interested in determining whether there's a physiological component to emotional distress that can be physically measured and used as an outcome in future studies," Dr. Sander says. "The study will pilot an innovative method of assessing a physiological correlate of emotional distress through sampling of cortisol levels attained from hair samples of the study participants. A consistent and replicable correlation between cortisol levels and other measures of emotional distress would yield a biomarker of emotional distress among persons with TBI. Using a tiny hair sample, we'll be able to track cortisol levels back in time over a couple of months." Study co-investigator **David B. Arciniegas, M.D.**, senior scientist and medical director for brain injury research, will direct this portion of the clinical trial. Dr. Arciniegas is executive director of the Beth K. and Stuart C. Yudofsky Division of Neuropsychiatry at Baylor College of Medicine, holds the Beth K. and Stuart C. Yudofsky Chair in Brain Injury Medicine, and is a professor in the BCM Menninger Department of Psychiatry and Behavioral Sciences.

Other co-investigators in the study are neuropsychologists **Kacey Maestas, Ph.D.**, and **Alison Clark, Ph.D.**, both of whom are investigators on staff at TIRR Memorial Hermann's Brain Injury Research Center.

"If the trial is successful, the findings will be published and shared with clinicians

Clinical trial continues on page 15

TIRR Memorial Hermann and the Children's Learning Institute Team Up to Enhance Early Development for Infants with Disabilities

By Heather Taylor, Ph.D.



Heather Taylor, Ph.D.

Each year, about 1,400 babies are born with spina bifida in the United States and about 10,000 children will develop cerebral palsy. Children with physical disabilities face

multiple challenges due to early physical and cognitive difficulties that affect their early learning and later academic performance and independence. Early intervention is critical for a child's development. We believe children can benefit best during infancy, when we can lay a foundation for later learning and motor functioning.

To that end, researchers from TIRR Memorial Hermann and the Children's Learning Institute (CLI) at The University of Texas Health Science Center at Houston (UTHealth) are testing the effectiveness of a parenting program on early learning and motor development of infants with spina bifida and infants with tone and strength disorders, including cerebral palsy. Begun in the fall of 2012, the four-year research project is funded through a \$2.65 million grant awarded to UTHealth by the U.S. Department of Education's Institute of Education Sciences. This study is important because parents have the greatest potential to influence their child's development due to the number of opportunities they have for interaction.

In the study, we are investigating whether an integrated parent responsiveness and motor support intervention will result in changes in parent behavior that lead to greater improvements in the infants' development of core skills and

competencies, including attention, cognition, goal-directed play, language and motor performance. Past research has shown that a more responsive parenting style improves children's development and learning - as do motor support strategies with motor development and learning. Rarely have the two been tested together.

We will enroll 180 children between 12 and 18 months in age - adjusted for prematurity - from Houston, McAllen and the surrounding communities. Study participants must have a diagnosis of spina bifida or have problems related to tone and strength, such as cerebral palsy. As part of our enrollment efforts, we are seeking referrals from area physicians and collaborating with agencies such as Easter Seals. Enrollment began in January; to date, 15 participants have been enrolled.

The research team places participants into one of three different intervention groups. One group is exposed to the Play and Learning Strategies (PALS) program, a nationally recognized program developed by CLI director Susan Landry, Ph.D., and pediatric psychologist Karen Smith, Ph.D. PALS promotes early learning through in-home coaching by trained experts who use weekly meetings, materials and video feedback to improve parent-child interactions and stimulate early language, cognition and social development.

Another group will work with the Play and Learning Strategies to Enable Children with Special Needs (PALS-Enable) program, which I developed using PALS as the foundation, working in collaboration with project co-investigators Dr. Landry, Marcia Barnes, Ph.D., and Cathy Guttentag, Ph.D., and in consultation with physical therapists and occupational therapists. PALS-Enable uses the same strategies as PALS, and adds motor supportive

strategies designed to improve the child's positioning and movement to ease exploration of the environment.

Researchers from TIRR Memorial Hermann and the Children's Learning Institute (CLI) at The University of Texas Health Science Center at Houston (UTHealth) are testing the effectiveness of a parenting program on early learning and motor development of infants with spina bifida and infants with tone and strength disorders, including cerebral palsy.

Participation in the study is in addition to any therapy the children are currently undergoing. We want to determine if these interventions have a benefit that goes beyond what they are already receiving.

The third group of participants will receive child development information through weekly phone calls from coaches. Each group intervention will be delivered once a week for 14 weeks.

To refer a family to the study, please contact me at heather.taylor@uth.tmc.edu or call Cathy Caldwell at 713.500.3702. ♦

Heather Taylor, Ph.D., is director for spinal cord injury research at TIRR Memorial Hermann and an assistant professor of pediatrics at UTHealth Medical School.

Strength Unlimited: A Community-based Program Provides an Enriched Environment for People of All Levels of Abilities

Karen Siu attributes her sister's ability to get out of her wheelchair and walk to her participation in TIRR Memorial Hermann's Strength Unlimited program. "This is a special place for people with physical disabilities along the continuum of care," says Siu, the primary caregiver for her sister Brenda Gee, who suffered a hemorrhagic stroke in 2005.

While caring for her sister, Siu has also logged eight years of volunteer work with Strength Unlimited, which offers an array of community programs tailored to meet the individual needs and goals of people of all levels of abilities. Among the services offered are fitness and wellness memberships, one-on-one personal training memberships, group fitness classes, recovery and health promotion programs and support groups.

"The ultimate goals of our program are to improve quality of life for people of all levels of abilities and maximize their potential for greater function," says **Anna De Joya, P.T., D.Sc., N.C.S.**, coordinator of Strength Unlimited and director of the Neurological Physical Therapy Residency Program at TIRR Memorial Hermann. "We work toward those goals by facilitating participation in physical activity to promote lifelong health and wellness. We also create evidence-based programs tailored to the specific needs of each of our clients to explore opportunities for continued neurorecovery. I firmly believe that Strength Unlimited has helped people come back from injury or illness and regain their roles in the community."

One beneficiary of the program is Mayra Cantu, who suffered a T12 incomplete spinal cord injury in 2005 as the result of an assault in Dallas. She joined Strength Unlimited after several surgeries and outpatient rehabilitation in Dallas and Houston. Today, she facilitates a support group offered through the program for members with spinal cord injuries and also



leads a Monday-evening stretching class.

"I love the fact that everyone who participates in Strength Unlimited feels comfortable," Cantu says. "The program has brought people together with so many different types of disabilities. We've become a big family, and we're all getting physically and emotionally stronger together. If there are people with physical disabilities who stay at home because they feel there's no place for them to exercise and socialize, I would love for them to try Strength Unlimited."

The program is designed for people with stroke, traumatic brain injury, spinal cord injury, multiple sclerosis, Parkinson's disease, cerebral palsy, cancer, neurodegenerative diseases, cardiovascular disorders and many other conditions. Two fitness specialists are available to work with clients in one-on-one sessions; they also run the wellness program and open gym program, and are supported by the volunteer program at TIRR Memorial Hermann.

Strength Unlimited offers participants the use of state-of-the-art rehabilitation equipment including Lokomat® robotic

training for adults and children; RTI FES and MOTomed® upper- and lower-body cycling; LiteGait®, a body weight-supported system for treadmill and over-ground exercise; Total Gym®, a sled with variable incline to adjust resistance levels; and neuromuscular electrical stimulation to facilitate movement during activity. To promote strength and fitness, clients have access to treadmills, upper-extremity ergometers, recumbent and stationary bikes, an elliptical machine, stair stepper, resistive cable systems for the upper and lower extremities, standing equipment and balance equipment. The program also offers the necessary support supplies for people with disabilities, including Ace™ wraps, air splints and gait belts that aid during exercise.

"Having the specialized equipment is very important," Siu says. "But the program offers much more than that. Becoming suddenly disabled is a major lifestyle change that requires enormous adjustments. It's important to keep your routine up. We all know who needs help
Strength Unlimited continues on page 15

A Young Boy Benefits from Rehabilitation Following Treatment for Glioblastoma Multiforme

In February 2008, Tina Bailey scheduled an office visit with her son's pediatrician when he developed croup and a bad cough. While at the doctor's office, 22-month-old Scottie exhibited right hand curling and right shoulder drop.

"In hindsight, the signs were there a couple of months earlier," Bailey says. "Scottie started tripping frequently and developed a limp, but we couldn't find anything wrong and the limp improved."

Bailey's pediatrician ordered an MRI, which revealed a large tumor located in the mid-brain and brainstem. Following a stereotactic biopsy, Scottie was diagnosed with glioblastoma multiforme (GBM), the most common and most aggressive malignant primary brain tumor seen in humans. The median survival after a diagnosis of GBM is 14 months. Because of its location, the tumor was inoperable, and Scottie was treated with standard-of-care radiation therapy and chemotherapy.

"As the cancer cells died, he developed hydrocephalus in the third ventricle," Bailey says. "The buildup of fluid inside his skull caused his brain to swell, which led to more neurological symptoms." He underwent a third ventriculostomy to drain the excess cerebrospinal fluid from the brain.

"The odds were really stacked against Scottie, but the tumor didn't grow back, which is completely amazing," she says. "We consider ourselves extremely blessed."

The tumor and treatment left Scottie with motor deficits. He could roll in bed but needed moderate assistance to move from one surface to another and maximal assistance to stand and walk. When he came to TIRR Memorial Hermann Pediatric Outpatient Rehabilitation in



Scottie in therapy

June 2011, he could walk only 10 feet with assistance.

Bailey requested the referral to TIRR Memorial Hermann after reading about the Lokomat®, a robotic-assisted treadmill that features body-weight support. The robot wraps around the user's legs and puts them through the walking motion at a comfortable pace on a treadmill.

"From the beginning, our primary goal with Scottie was increasing his independence with the least amount of support," says **Laura Martin, P.T., D.P.T., N.C.S.** "To accomplish that objective, we started him walking on a treadmill suspended by a harness to get him used to walking with support before transitioning him to the Lokomat. In the first

couple of weeks, his buy-in to therapy improved, as did his strength. Over the following weeks, we continued to build his tolerance for walking with the Lokomat to a maximum of 40 minutes. We're now working toward transitioning from the walker to crutches, and we're also focused on improving transitional movement - getting up and down from the floor and climbing into chairs. Being able to get in and out of a wheelchair was a big learning moment for Scottie."

Today, at the age of 7, Scottie can squat, reach, throw beanbags without support and walk more than 100 feet using a walker. Martin attributes Scottie's success to the support of his parents and his own attitude. "Raising a family is a fulltime job," she says. "Still, they take the time to drive from their home in Cypress through Houston traffic multiple times a week for therapy appointments. Therapy is demanding and time consuming. In addition to our sessions with Scottie, they do a lot of continuing work with him at home. They've been very conscious of putting him in situations where he can grow stronger."

"It's been an awesome experience for all of us," Bailey says. "You can tell that therapy is more than a job for the staff. They're not just going through the motions. Everyone is very enthusiastic and creative in working with him, and Laura is very, very knowledgeable. As a result, his improvement has been dramatic. I can hand him his walker, and he can walk into the house without my help. He couldn't do that a year and a half ago. I know he's in good hands."

To learn more about cancer rehabilitation, please call 713.797.5942. ♦

Lex Frieden honored by Daughters of the American Revolution

Lex Frieden, disability rights champion, director of Independent Living Research Utilization at TIRR Memorial Hermann and professor of biomedical informatics at the UTHealth Medical School, received the most prestigious honor awarded by the National Society of Daughters of the American Revolution (DAR).

Frieden was presented the organization's Medal of Honor by the Texas Society DAR at a March 15 meeting in downtown Houston. The medal honors people who have made lasting contributions to American heritage and who have demonstrated leadership, trustworthiness, service and patriotism.

Frieden has devoted his life to helping people with disabilities live independently and participate fully in their communities. He is one of the architects of the Americans with Disabilities Act of 1990



From left to right are: Barbara Petrov, chairman, Americanism Committee, Texas Society DAR; Frieden; Pamela Rouse Wright, state regent, Texas Society DAR; and Susan J. Garrison, M.D., past regent, Brazos Valley Chapter National Society DAR.

that assures equal rights for people with disabilities.

Frieden directs the Independent Living Research Utilization program at TIRR Memorial Hermann, which since 1977 has served as a national center for information, training, research and technical assistance in the area of independent living.

He is the author or co-author of more than 60 articles on independent living, disability rights and rehabilitation. He holds a bachelor's in psychology from the University of Tulsa and a master's in social psychology from the University of Houston. In 2004, he was awarded an honorary doctorate of law from the National University of Ireland. Congratulations Lex! ♦

Respiratory Services Receives Quality Award

The American Association for Respiratory Care (AARC) has named TIRR Memorial Hermann a Quality Respiratory Care Institution in which citizens in the community can be assured of receiving the highest standards of respiratory care. About 700 hospitals out of the 5,000 in the U.S. have been named Quality Respiratory Care Institutions. Our hospital will be listed on the AARC's website for consumers, YourLungHealth.org by April 15, 2013.

This designation recognizes that all respiratory therapists employed by the hospital to deliver respiratory care services are either legally recognized by the state as competent to provide respiratory care services or hold the CRT or RRT credential. It also recognizes that the respiratory therapists are available 24

hours a day and that all care delivered is not concurrent. In addition, a doctor of medicine or osteopathy is designated as medical director of respiratory care services and the department has a process that periodically compares performance of the respiratory therapy department on efficiency and quality metrics with similar departments for the purpose of identifying and achieving best practice. "We are honored and excited to receive this award," says Darby Cruz, manager, Respiratory Services, TIRR Memorial Hermann. "We constantly strive for the best outcomes, and it's gratifying when an independent organization recognizes the excellent care we provide." Congratulations to the Respiratory Therapy department on this achievement! ♦



TIRR Memorial Hermann Respiratory Team

Lex Frieden Recognized Among Nine Leaders in the Global Disability Community

In March 2013, the Viscardi Center announced the recipients of a new international award honoring people living with disabilities for their work and



Lex Frieden

influence on the global disability community of more than 1 billion people. Among the winners of the Henry Viscardi Achievement Award is Lex Frieden, who is

director of the Independent Living Research Utilization (ILRU) program at TIRR Memorial Hermann, a professor of biomedical informatics and rehabilitation at the UTHealth Medical School and The University of Texas System Chancellor's Health Fellow on Disability.

The Henry Viscardi Achievement Awards bear the name and honor the vision of Dr. Henry Viscardi Jr., who was one of the world's leading advocates for people with disabilities. The announcement coincided with the 80th anniversary of the inauguration of President Franklin D. Roosevelt, who as a member of the disability community was among the most influential figures of the 20th century. President Roosevelt was one of eight presidents whom Dr. Viscardi advised during his lifetime.

The awards drew nominations from seven nations and from cities throughout the United States. The Selection Committee was co-chaired by United States Senator Robert Dole, actress Marlee Matlin and United Nations Representative Luis Gallegos.

"We congratulate the nine recipients

and offer our praise to them for their lifetime of work. Their dedication and accomplishments represent the vision and commitment of Dr. Viscardi and the 61-year mission of The Viscardi Center," said John D. Kemp, president and CEO of the Long Island-based center, in presenting the awards. "The recipients' collective efforts have truly transformed the world's thinking about people with disabilities. Each of them is an example of the change that can come about when you combine ambition and dedication when facing personal and societal challenges."

Frieden is regarded as a founder and leader of the independent living movement for people with disabilities. In 1977, he led an initiative to define and set forth a blueprint for the development of independent living programs nationwide. In 1984, President Ronald Reagan appointed him the first director of the National Council on Disability, where he led the initial drafting of the Americans with Disabilities Act (ADA). He was appointed by President George W. Bush as chair of the National Council on Disability in 2002, and also served an eight-year term on the United Nations Panel of Experts on the Standard Rules for Disability. He is author or coauthor of more than 60 articles on independent living, disability rights and rehabilitation, and has received two Presidential Citations for his work in the field of disability. Frieden sustained a spinal cord injury as a freshman in college in 1967.

"Dr. Henry Viscardi was a pioneer in the global disability movement and he remains an inspiration to so many people today," Frieden says. "Across the world we have made great strides in access and opportunity, but there is more work to be done. I am very honored by this recognition, which is as much a reflection of the outstanding work of my colleagues as it is of my own achievements."

The other eight recipients of the Henry Viscardi Achievement Award are Laurie Ahern, president of Disability Rights International in Washington, D.C.; Rosangela Berman Bieler, senior advisor on children with disabilities for UNICEF

Frieden is regarded as a founder and leader of the independent living movement for people with disabilities. In 1977, he led an initiative to define and set forth a blueprint for the development of independent living programs nationwide.

in New York City; Tony Coelho, former U.S. Representative from California and primary sponsor of the Americans with Disabilities Act of 1990; Yoav Kraiem, chair of the National Council for Community Relations – Mental Health for Israel; U.S. Representative James R. Langevin of Rhode Island's Second Congressional District; Kathleen Martinez, assistant secretary, Office of Disability Employment Policy in the U.S. Department of Labor, Washington, D.C.; Patrick D. Rummerfield, director-patient liaison, International Center for Spinal Cord Injury at the Kennedy-Krieger Institute in Chesterfield, Mo.; and Michael Ashley Stein, Ph.D., executive director of the Harvard Law School Project on Disability.

For more information, visit www.viscardiawards.org.

Danielle Melton Named Among Best Doctors, Texas Rising Stars



Danielle Melton, M.D.

Danielle Melton, M.D., has been named to the 2013 Best Doctors in America® list, which includes the nation's most respected specialists and outstanding primary care

physicians. The list represents the top 5 percent of doctors in the United States selected from among more than 46,000

On the Move continues on page 12

On the Move continued from page 11

physicians in over 400 specialties and subspecialties.

Dr. Melton is the director of the Amputee & Orthotics and Prosthetics Program at TIRR Memorial Hermann, where she specializes in the care of people with amputations, encompassing pre-prosthetic management, prosthetic design and prescription, and rehabilitation. She also specializes in bracing and orthotics for patients with peripheral nerve injuries and spasticity. Dr. Melton's amputee practice is based at TIRR Memorial Hermann and Memorial Hermann-Texas Medical Center. In the acute setting she evaluates and treats patients both before and immediately after amputations, coordinating care between the surgeon and the rehabilitation team. Her patients are followed long-term at the TIRR Memorial Hermann Outpatient Medical Clinic to provide comprehensive continuity of care.

Dr. Melton, who is an attending physician at TIRR Memorial Hermann, a clinical assistant professor of physical medicine and rehabilitation at the UTHealth Medical School, and PM&R outpatient medical director at Memorial Hermann-TMC, was first selected among Best Doctors in America in 2009.

Best Doctors in America is the result of more than two decades of work conducting the largest continuous independent survey of the medical profession, which mimics the informal peer-to-peer process doctors use to identify the right specialists for their patients. Polling and balloting software are used to gather the insight and experience of tens of thousands of leading specialists across the country.

Dr. Melton was also named among the 2013 Texas Super Doctors® Rising StarsSM. Texas Super Doctors are nominated by physicians as those they would choose in seeking medical care. Only 2.5 percent of active Texas physicians are named to the Rising Stars list, which includes doctors who have been practicing for 10 years or less. Physicians are grouped into 41 specialties and those who acquired the highest total points from surveys, research and blue-ribbon panel reviews are selected for inclusion.

TIRR Memorial Hermann Welcomes New Recruits

Three physicians have joined the staff of TIRR Memorial Hermann and the Baylor/UTHealth Alliance for Physical Medicine and Rehabilitation.

Victor H. Chang, M.D., comes to TIRR Memorial Hermann as clinical director of the Brain Injury and Stroke Program



Victor H. Chang, M.D.

and medical director of case management, with a concurrent appointment as associate professor in the department of Physical Medicine and Rehabilitation at the UTHealth

Medical School. He was previously an associate professor in the department of PM&R at the University of Colorado Denver and an attending physician at the University of Colorado Hospital.

After receiving his medical degree at the University of Michigan Medical School in 1995, Dr. Chang completed an internship in the Transitional Medicine Residency Program at Evanston Hospital/Northwestern University Medical School in Evanston, Ill., followed by a residency in physical medicine and rehabilitation at the University of Washington Medical Center in Seattle. He completed a fellowship in neurotrauma rehabilitation at Craig Hospital in Englewood, Colo.

He has been named among the Best Doctors in America every year since 2007. In 2008, he was the recipient of the Outstanding Fulltime Physician Award from the University of Colorado Hospital in recognition of high standards of leadership and devotion to clinical and service excellence. That same year he was also recognized with the Golden Goniometer Award by the department of PM&R at the University of Colorado in recognition of "faculty teaching and dedication beyond measure."

Dr. Chang is a sought-after speaker with a long list of invited presentations

and the author or co-author of articles that have appeared in *PM&R*, *Spine Journal*, *Archives of Physical Medicine and Rehabilitation* and *Hand Clinics*, among others.

Glendaliz Bosques, M.D., joins the medical staff at TIRR Memorial Hermann and Children's Memorial Hermann Hospital as chief of pediatric rehabilitation medicine, with a concurrent appointment as assistant professor in the department of PM&R at the UTHealth Medical School. Before joining TIRR



Glendaliz Bosques, M.D.

Memorial Hermann, she was a faculty member in the department of Pediatric Rehabilitation of the Kennedy Krieger Institute and Johns Hopkins University School of Medicine in

Baltimore, where she was director of the Multidisciplinary Brachial Plexus Clinic. She also assisted in staffing the Paralysis Clinic, where she managed youth and young adults with spinal cord injuries.

Dr. Bosques received her medical degree from the University of Puerto Rico School of Medicine in San Juan, in 2003, graduating *magna cum laude*. She completed her residency in physical medicine and rehabilitation at the Baylor College of Medicine/UTHealth Physical Medicine and Rehabilitation Alliance in 2007, followed by a two-year pediatric medicine fellowship at the Cincinnati Children's Hospital Medical Center/University of Cincinnati College of Medicine.

Dr. Bosques is a member of the American Academy of Physical Medicine and Rehabilitation (AAPMR) and the American Association of Physiatrists (AAP), and currently chairs the pediatric section of the American Spinal Injury Association (ASIA). Her clinical and research interests are in the area of advanced rehabilitation of paralytic diseases in children, including traumatic and non-traumatic etiologies. Her

practice also focuses on brain injury and stroke; nerve injuries, including neonatal brachial plexus palsy; spina bifida; spasticity management; botulinum toxin injections for spasticity; and intrathecal baclofen pump management.

An experienced, board-certified physical medicine and rehabilitation specialist, **Mansi Jhaveri, D.O.**, comes to



Mansi Jhaveri, D.O.

TIRR Memorial Hermann from Norristown, Pa., where she was in private practice at Norristown Rehabilitation Medicine. She holds a joint faculty appointment as assistant

professor in the department of Physical Medicine and Rehabilitation and the department of Neurology at the UTHealth Medical School.

After receiving her bachelor's in neuroscience and behavioral biology with academic honors, she received her doctor of osteopathic medicine at Philadelphia College of Osteopathic Medicine. She completed a residency in PM&R at the Hospital of the University of Pennsylvania in Philadelphia. In June 2009, she received the Emory Stoner, M.D., Award from the Pennsylvania Academy of Physical Medicine and Rehabilitation for her work on copper deficiency as a cause of sensory ataxia in a patient with gastric ulcer resection. She also served as president of a community organization, Elementary Science Education Partners, created to advance science education in inner-city schools.

Dr. Jhaveri's work at TIRR Memorial Hermann will focus on providing rehabilitation for stroke patients. ♦

IN PRINT

Berman A, Watson E, Fried G, D'Urso K, D'Urso D, Cavadini N, Brooks M, **Kern M, Wenzel L, Taylor HB,**



Lisa Wenzel, M.D.

Ardolino E. Restorative rehabilitation entails a paradigm shift in pediatric incomplete spinal cord injury in adolescence: An illustrative case series. *Journal of Pediatric Rehabilitation Medicine*

2012;5(4):245-259.

Ifejika-Jones NL, Peng H, Noser EA, **Francisco GE,** Grotta JC. Hospital-acquired Symptomatic Urinary Tract Infection in Patients Admitted to an Academic Stroke Center Impacts Discharge Disposition. *PM&R* 2013;5:9-15.

Li S. Breathing-controlled electrical stimulation (BreEStim) for management of neuropathic pain and spasticity. *Journal of Visualized Experiments* 2013;(71)e50077, doi:10.3791/50077. URL: www.jove.com/video/50077/.

Pike M, Swank PR, **Taylor HB,** Landry SH, Barnes MA. Effect of Preschool Working Memory, Language, and Narrative Abilities on Inferential Comprehension at School Age in Children with Spina Bifida Myelomeningocele and Typically Developing Children. *Journal of the International Neuropsychological Society* 2013;7:1-10.

Sander AM, Van Veldhoven LR, Backus D. Maximizing usability of evidence in



Laura Ritter Van Veldhoven, Ph.D., M.P.H.

rehabilitation practice: Tips for researchers. *Archives of Physical Medicine and Rehabilitation* 2013;94 (1Suppl):S43-48.

Silva MA, Nakase-Richardson R, **Sherer M,** Barnett SD, Evans

CC, Yablon SA. Posttraumatic confusion predicts patient cooperation during TBI rehabilitation. *American Journal of Physical Medicine and Rehabilitation* 2012;91:890-893.

Sunnerhagen KS, Olver J, **Francisco GE.** Assessing and Treating Functional Impairment in Poststroke Spasticity. *Neurology* 2013;80:S35.

Taylor HB, Barnes MA, Landry SH, Swank PR, Fletcher JM, Huang F. Motor contingency learning and infants with spina bifida. *Journal of the International Neuropsychological Society* 2013;19(2):206-215.

Taylor HB, Robinson-Whelen S, Huges R, Nosek M. Pain and women with spinal cord injury, multiple sclerosis, joint connective tissue disorders and other physical disabilities. *Archives of Physical Medicine and Rehabilitation* 2012;93(10):e57. ♦

ON THE PODIUM

Davis LC. Resource Facilitation: The Key to Maximizing Community Participation and Reducing TBI-related Costs.



Lynne Davis, Ph.D.

Invited lecture at the First Texas Summit on Brain Injury, Austin, Texas, February 2013.

De Joya, AL. TBI EDGE Recommendations: Application to Practice, Teaching and Research. Presented at the American Physical Therapy Association Combined Sections Meeting, San Diego, Calif., January 2013.

De Joya AL, Fishman H. Development of a Clinical Reasoning and Reflection Framework for Mentorship within a Neurologic Physical Therapy Residency Program. Poster presented at the American Physical Therapy Association Combined Sections Meeting, San Diego, Calif., January 2013.

On the Podium continues on page 14

Elms E. Disability Awareness and Ethics. Invited presentation at Southern University's Department of Rehabilitation and Disability Studies. Baton



Edward Elms, M.D.

Rouge, La.,
January 2013.

Elms E. Independent Living and Employment for Cancer Survivors and People with Disabilities. Poster presented at the Cancer

Prevention & Research Institute of Texas (CPRIT) Conference, Austin, October 2012.

Hart T, **Sander AM**, McPherson KM. Goal Attainment Scaling as Assessment and Treatment: Concepts and Applications for Brain Injury Rehabilitation. Course presented at the annual meeting of the American Congress of Rehabilitation

Medicine and American Society for Neurorehabilitation, Vancouver, British Columbia, November 2012.

Maestas KL, **Sherer M**, **Sander AM**, Havins WN. Predictors of Anxiety in

Angelle Sander, Ph.D.

Persons with Traumatic Brain Injury. Presented at the meeting of the International Neuropsychological Society, Wailoloa, Hawaii, February 2013.

Melton DH. Preventing Limb Loss in America in collaboration with Amputee Coalition, Scientific Medical Advisory Committee. Presented at the American Association of Physical Medicine and Rehabilitation Assembly, Atlanta, Ga., November 2012.

Melton DH. Problem-based Learning: Module for Military Trauma. Presented in collaboration with course director Joseph Love, M.D., and Saleem Khan, M.D., UTHealth Medical School, Houston, Texas, December 2012.

Newman C, **Tseng E.** Outcome Measures

Recommendations from the Neurology Section Spinal Cord Injury EDGE Task Force. Presented at the American Physical Therapy Association Combined Sections Meeting, San Diego, Calif., January 2013.

Sander AM, Kreutzer JS. Intimate Relationships and Sexual Functioning After Brain Injury. Symposium presented at the American Psychological Association Division 22 Rehabilitation Psychology 2013 Conference: Expanding the Boundaries of Rehabilitation Psychology, Jacksonville, Fla., February 2013.

Sander AM. Caregiver Functioning After Traumatic Brain Injury: Implications for Rehabilitation. Invited lecture presented at TIRR Memorial Hermann's Rehabilitation Solutions 2013 Conference, Houston, Texas, February 2013.

Sander AM. Integrating Sexuality into Traumatic Brain Injury Rehabilitation. Caregiver Functioning After TBI: Implications for Rehabilitation. Invited lectures presented at the conference Psychological and Behavioral Issues After Traumatic Brain Injury and Stroke: Interventions, Sexuality, Gender, and Psychosocial Consultation, JFK Medical Center, Edison, N.J., December 2012.

Sander AM, Bogner J. Brief Intervention to Reduce Substance Misuse Following TBI. The Mitchell Rosenthal Memorial Lecture Webinar, sponsored by the *Journal of Head Trauma Rehabilitation* and Brain Injury Association of America, December 2012.

Sander AM. A Randomized, Controlled Trial of a Brief Intervention for Problem Alcohol Use in Persons with Traumatic Brain Injury. Paper presented at the annual meeting of the American Congress of Rehabilitation Medicine and American Society for Neurorehabilitation, Vancouver, British Columbia, November 2012.

Sherer M, **Maestas KL**, **Sander AM**, Pastorek NJ, Havins WN. Factors That Predict Self-reported PTA Duration in Persons with Medically Documented TBI. Presented at the meeting of the International Neuropsychological

Society, Wailoloa, Hawaii, February 2013.

Struchen, MA. Facilitation of Social



Margaret A. Struchen, Ph.D.

Integration After TBI: Assessment and Treatment of Social Communication Impairments and Community-based Programs. Invited presentation at the Presidential Reception, Houston Neuro-

psychological Society, Houston, Texas, February 2013.

Szot C, **Martin L.** Does Early Orthotic Management Delay Motor Learning and Walking Recovery in an Individual with Incomplete Spinal Cord Injury? Poster presented at the American Physical Therapy Association Combined Sections Meeting, San Diego, Calif., January 2013.

Taylor HB, Barnes M, Landry SH, Swank PR. Motor Contingency Learning in Infants with Spina Bifida. Presented at the Howard H. Steel Conference: Pediatric Spinal Cord Injuries and Dysfunction, Orlando, Fla., November 2012.

Taylor HB, Robinson-Whelen S, Huges R, Nosek M. Pain and Women with Spinal Cord Injury, Multiple Sclerosis, Joint Connective Disorders and Other Physical Disabilities. Presented at the American Congress of Rehabilitation Medicine, Vancouver, British Columbia, October 2012.

Watson E, Ardolino E, **Taylor HB**, **Kern M**, Cavadini N, D'Urso D, Behrman AL. Locomotor Training Effects on Functional Mobility, Health, and Emotion Wellbeing in Three Adolescents with Incomplete Spinal Cord injuries: A Case Series. Presented at the Howard H. Steel Conference, Pediatric Spinal Cord Injuries and Dysfunction Orlando, Fla., November 2012. ♦

ACCOLADES



Corwin Boake, Ph.D., a neuropsychologist at TIRR Memorial Hermann and clinical associate professor of physical medicine and rehabilitation at the UTHealth Medical School,

has been elected treasurer of the American Board of Clinical Neuropsychology.

Clinical Trial continued from page 6

around the country,” Dr. Sherer says. “According to the Agency for Healthcare Research and Quality, it takes 17 years for a new discovery to be fully implemented into clinical practice. What we’re seeing now, particularly with NIDRR, is a greater focus on translating new knowledge

An objective of the study is the development of a user-friendly therapy manual that we can quickly put in the hands of clinicians so that other rehabilitation facilities can replicate our methods.

more quickly into clinical practice. It’s important to publish results, but publication alone is not adequate to implement change, and the benefit to patients isn’t fully realized until the change has been implemented. An objective of the study is the development of a user-friendly therapy manual that we can quickly put in the hands of clinicians so that other rehabilitation facilities can replicate our methods.”

For more information about the study, contact Dr. Sander at 713.630.0515. ♦

CMO Message continued from page 2

providers who understand the complexity and full implications of their health challenges.

The feedback we’ve received from our patients is highly positive. As we add new physicians and services at TIRR Memorial Hermann, we’ll continue to expand our medical home, find new ways to reach out to our community and become even more involved in meeting the full range of needs of people with disabilities.

Gerard E. Francisco, M.D.

*Chief Medical Officer
TIRR Memorial Hermann
Chair, Department of Physical Medicine
and Rehabilitation
UTHealth Medical School*

Strength Unlimited continued from page 8

and what their issues are. We can socialize while we’re exercising without judgment or staring. There’s always someone here willing to help, whether it’s a fitness specialist, a therapist, a family member or a volunteer. We all look out for each other.”

“We’ve gotten good feedback from our clients and caregivers, who tell us the program has added meaning to their lives and helped them return to the community,” De Joya says. “Our next goal is formal research in which we track our outcomes qualitatively and quantitatively – to measure improvement and compare it longitudinally in terms of increased functional mobility and participation in meaningful life roles. We want data about our outcomes from a quality-of-life perspective to help further shape our program.”

Participants in the Strength Unlimited program must have a physician referral. For more information, call 713.524.9702. ♦

CEO Message continued from page 16

Greater Houston community. Last November, we opened two new outpatient clinics – at Memorial Hermann Memorial City Medical Center and Memorial Hermann Northwest Hospital – and this fall, we’ll add another outpatient facility at Memorial Hermann The Woodlands Hospital.

I’d like to end with a brief mention of the success of the ReelAbilities film festival, held for the first time in Houston last February, organized by JFS Disability Services with TIRR Memorial Hermann as the lead sponsor. The goal of the festival was to use the power of the arts to create a platform for meaningful dialogue about the lives and contributions of individuals with disabilities, and to raise awareness of the barriers created by misinformation or lack of knowledge about the challenges faced by those whose lives are affected by disability. We believe we accomplished our goal; the films were well attended and well received, and each screening was followed by thoughtful and meaningful dialogue in venues that included schools, places of worship, cultural organizations and community spaces.

Ninety-six percent of the nearly 3,400 people who attended film festival events and responded to surveys rated the films as either good or very good, and 86 percent reported that their perceptions of individuals with disabilities had changed after attending the festival. Sponsorship of the festival was a good fit for us. In addition to clinical care, research and teaching, our mission includes community reintegration and the inclusion of people of all levels of abilities, ensuring that they survive and thrive.

Carl E. Josehart
*Chief Executive Officer
TIRR Memorial Hermann*



7737 Southwest Freeway
Houston, TX 77074

memorialhermann.org

Nonprofit Org.
U.S. POSTAGE
PAID
Permit No. 3156
Houston, TX

Follow us on

Facebook: www.facebook.com/TIRRMemorialHermann



M MESSAGE FROM THE CEO

Construction of the new TIRR Memorial Hermann Research Institute is in full



swing and on target for our planned August move-in. The completion of the facility will allow all of our researchers to collaborate under one roof for the first time in our history, and encourage greater interaction between researchers and clinicians. As our research funding grows, the new Institute will allow us to increase the size and scope of our research endeavors and the number of innovations we bring to the practice of rehabilitation medicine.

I'd like to congratulate the winners of

this year's TIRR Memorial Hermann Rehabilitation Grant Program, which supports innovation in research internally. The Pilot Project Competition funds fulltime researchers to conduct preliminary studies that will lead to applications for larger federal or foundation grants for projects to be conducted at our institution. This year's Pilot Project winners are **Fabrizio Sergi, Ph.D.**, who will design, build and validate a robotic system to assist with wrist motion and can be used in a functional MRI scanner to measure the beneficial effects of these types of robots; and **Jeffrey Berliner, D.O.**, and **Shou-Hsiu Chang, P.T., Ph.D.**, whose project will measure the effectiveness of the ReWalk™ robotic exoskeleton in improving walking performance in persons with spinal cord injury.

Our Staff Project Competition

provides funding to our therapists, nurses and others to carry out small research projects that relate to the care they provide. This year, **Patrice Perrin, P.T., D.P.T.**, and **Kelly Betts, P.T., D.P.T.**, received an award to evaluate the effectiveness of body weight-supported treadmill training in improving responsiveness in minimally conscious patients. **Cullen Gibbs, Ph.D.**, **Chris Shields, P.T., D.P.T.**, **Laura Martin, P.T., D.P.T., N.C.S.**, and **Anna De Joya P.T., D.Sc., N.C.S.**, received funding for a study that will evaluate the effectiveness of exercise in decreasing headache and improving cognition in persons who have sustained mild traumatic brain injury.

As the rehabilitation leader for the Memorial Hermann Health System, we continue to extend the care we provide in the Texas Medical Center to the

CEO Message continues on page 15

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 23 consecutive years. TIRR Memorial Hermann provides rehabilitation services for individuals with spinal cord injuries, brain injuries, strokes, amputations and neurodegenerative diseases.

TIRR Memorial Hermann is one of 12 hospitals in the not-for-profit Memorial

Hermann system. An integrated health 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.