

## WINTER 2013

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## Research Collaboration at TIRR Memorial Hermann with Three Other Houston Institutions on Noninvasive Brainwave Robot Interface

A \$1.17 million collaborative grant from the National Institutes of Health (NIH) and the President's National Robotics Initiative (NRI) will enable four Houston institutions to create and validate a human-robot interface with a noninvasive brain-machine to help stroke patients recover use of their upper limbs to the fullest extent possible. Awarded to Rice University, the University of Houston (UH) and The University of Texas Health Science Center at Houston (UTHealth) Medical School, the grant will fund the



*Principal Investigators collaborating at TIRR Memorial Hermann*

development of neurotechnology that will interpret the brainwaves of stroke patients, allowing them to use their thoughts to operate an exoskeleton that wraps around the arm from the fingertips to the elbow. The device will be validated by UTHealth Medical School physicians and scientists at TIRR Memorial Hermann in up to 40 volunteer patients during the final two years of the four-year R01 award.

Once operational, the intelligent exoskeleton will use thoughts to trigger repetitive motions and retrain the brain's motor networks. Principal investigator **Marcia O'Malley, Ph.D.**, and her Rice University team are developing the exoskeleton in the Mechatronics and Haptic Interfaces (MAHI) Lab. "Repetitive motion has proven effective at retraining motor nerve pathways damaged by stroke, but patients must be motivated to do the work," says Dr. O'Malley, an associate professor of mechanical engineering and materials science at Rice, director of the MAHI Lab and director of rehabilitation engineering at TIRR Memorial Hermann. "Robotics that quickly adapt to changes made by the user and changes in the environment have the potential to significantly improve independence and help people with disabilities to return to work and engage in all aspects of human life."

An earlier version of the MAHI-Exo II, developed by Dr. O'Malley's team and currently in validation trials with spinal cord injury patients at the UTHealth PM&R Motor Recovery Laboratory at

*Robotics continues on page 9*

## FEATURED IN THIS ISSUE

### **Jeffrey Berliner, D.O.**

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### **Nuray Yozbatiran, Ph.D.**

Research Scientist and Instructor, Department  
of PM&R, UTHealth Medical School

## MESSAGE FROM THE CMO

Those of us who choose physical medicine and rehabilitation as a profession do so



*Gerard E. Francisco,  
M.D., CMO*

out of a strong desire to help people return to as full a life as possible after disabling illness or injury. We become discoverers when we meld that desire with the thrill of tackling research focused on why disease occurs, how our interventions help people heal, and new and better ways to provide rehabilitative care.

By fall, all of our research programs will be housed at the new TIRR Memorial Hermann Research Institute. The synergy created when researchers from different disciplines and programs work together under one roof will fuel a new excitement about discovery and advance the art and science of rehabilitation.

I never forget that TIRR is an acronym for The Institute for Rehabilitation and Research. The proximity of our new research institute to the hospital – connected by a second-story bridge – will

allow for greater discussion and exchange of ideas between researchers and clinicians, and an opportunity to look at both endeavors with new eyes. That exchange has been the foundation of the exceptional care we've provided for more than 50 years. In addition, we have opened our doors to collaborators at UTHealth Medical School, Rice University and the University of Houston to allow for synergistic research efforts that parallel the team approach in the clinical practice of rehabilitation.

Our new building will be a forum for discovery that will continue to attract physicians and scientists who are passionate about advancing rehabilitation and inspired to bring new knowledge to the bedside as quickly as possible. I'm proud to be part of TIRR Memorial Hermann at this exciting time in our history.

*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*

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*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](mailto:Monica.Kinnard@memorialhermann.org). All available opportunities can be viewed at [memorialhermann.org](http://memorialhermann.org).*

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## A Pioneering Study Assesses Robotic Training of Arm and Hand Movements After Incomplete Spinal Cord Injury

Before he participated in a study currently under way in the UTHealth PM&R Motor Recovery Laboratory at TIRR Memorial Hermann, Ronald Bledsoe, who suffered a spinal cord injury in 2005, had little strength in his arms and hands. After 12 sessions using a robotic exoskeleton under the direction of researcher **Nuray Yozbatiran, Ph.D.**, Bledsoe was able to push himself up from his wheelchair with improved arm and grip strength.

“The most remarkable change was in the strength of his arms,” says Dr. Yozbatiran, a research scientist and instructor in the department of Physical Medicine and Rehabilitation at The University of Texas Health Science Center at Houston (UTHealth) Medical School. “One month post-study, Ronald was still continuing to improve in grip and pinch strength and in hand functions that replicate daily living tasks.”

**A**fter 12 sessions using a robotic exoskeleton under the direction of researcher **Nuray Yozbatiran, Ph.D.**, Bledsoe was able to push himself up from his wheelchair with improved arm and grip strength.

The pilot study – “Robotic Training of Hand and Arm Movements After Spinal Cord Injury (SCI)” – is designed to assess the capability of the MAHI-Exo II exoskeleton to enhance upper-extremity recovery in 10 people with incomplete SCI. Participants are followed for 12 months after therapy, which involves three-hour sessions that take place three days a week over a four-month period.

“Repetitive training is very important to create plasticity in the central nervous system, which leads to neurologic recov-



*Bledsoe participating in a research study*

ery,” Dr. Yozbatiran says. “Through the study, we’re providing patients with an alternative treatment modality that uses robotics to achieve that repetition. We expect to gain insight into who benefits most from robotic treatment – what type of injury, how long after the injury and the level of injury. We’ll also develop insights into how we can extend this study to help various other SCI populations. Our hope is to run a larger randomized trial with a control group receiving conventional upper-extremity therapy versus robotic training.”

Developed and tested by engineers at Rice University’s Mechatronics and Haptic Interfaces (MAHI) Lab under the direction of **Marcia O’Malley, Ph.D.**, the MAHI Exo-II had not been evaluated clinically for rehabilitation applications prior to the collaboration with principal investigator **Gerard Francisco, M.D.**, and his team. With funds from a Mission Connect research grant, the robotic device, which allows for assisted or fully supported performance of tasks when subjects reach the limit of their ability, was adapted for use with subjects who have suffered neurological injury. All prior applications at Rice were in healthy individuals.

Bledsoe notes the importance of keeping up the work. “After the 12 sessions is

when the real work begins – from three days a week to every day – because repetition is important in retraining your mind and body,” he says. “My ability to pick things up has improved because I practice a lot, imitating what the machine did for me. I just need to keep it up.”

“Ronald was highly motivated during the training and his commitment to recovery continues, which plays an important role in gaining benefit from the use of the exoskeleton,” Dr. Yozbatiran says. Like Bledsoe, who volunteers at TIRR Memorial Hermann, three enrolled subjects whose results were presented in a case series at the Mission Connect meeting held in December 2011 benefited to various degrees, with improvements in muscle strength and arm and hand functions.

**D**eveloped and tested by engineers at Rice University’s Mechatronics and Haptic Interfaces (MAHI) Lab under the direction of **Marcia O’Malley, Ph.D.**, the MAHI Exo-II had not been evaluated clinically for rehabilitation applications prior to the collaboration with principal investigator **Gerard Francisco, M.D.**, and his team.

“Patients usually experience some amount of fatigue, but there have been no adverse events,” Dr. Yozbatiran says. “None of our subjects had fatigue, pain or discomfort that lasted more than 24 hours after a session. They’ve tolerated the treatment well and, overall, have gained strength, better quality of movement and the ability to make faster, smoother movements.” ♦

## Innovations in Robotics and Neurorecovery for Spinal Cord Injury

By Jeffrey Berliner, D. O.



Dr. Jeffrey Berliner

Robots have played a critical role in modern medicine since the late 1980s when the first laparoscopic surgery – a cholecystectomy – was performed. Today, robots are aiding in neurorecovery and a return of function in the arms and legs of those affected by spinal cord injury (SCI). Two studies currently under way at TIRR Memorial Hermann aim to improve quality of life for individuals with SCI.

Relatively few robotic devices have been developed to aid in the restoration of function of the upper extremities in persons with tetraplegia. To facilitate innovation and develop new therapeutic strategies, TIRR Memorial Hermann and Rice University forged a partnership that resulted in an ongoing clinical trial of one of the first robotic exoskeleton devices to aid in the recovery of arm function and grip strength.

With a research grant from Mission Connect, a collaborative neurotrauma research project created to translate scientific knowledge into pioneering medical treatments for neurological injuries, principal investigator **Gerard Francisco, M.D.**, and his team collaborated with engineers from Rice University’s Mechatronics and Haptic Interfaces (MAHI) Lab, directed by **Marcia O’Malley, Ph.D.**, to assess the capabilities of the MAHI Exo-II to enhance upper-limb recovery in persons with incomplete SCI. Developed and tested in healthy individuals at Rice, the robotic exoskel-

eton had not previously been evaluated clinically for rehabilitation applications.

The MAHI Exo-II is adapted from the Rice Wrist, which features a customizable assist-as-needed architecture that allows patients to perform prescribed tasks. When patients reach the limit of their ability, the Rice Wrist allows for assisted or fully supported performance of tasks based on a real-time performance assessment. The kinematic design of the device allows for reproduction of most of the natural human wrist and forearm workspace, while also allowing for a limited range of elbow motion. The study is actively enrolling subjects.

In addition, two new robotic exoskeletons expand TIRR Memorial Hermann’s capability to help individuals with spinal cord injury regain the ability to walk. Both the eLegs™ and ReWalk™ are wearable devices that fit on the outside of the body and are powered by motors at the hips and knees that drive the legs in a walking pattern. TIRR Memorial Hermann’s SCI research team completed a Phase I investigational study of the eLegs exoskeleton. Future studies will investigate efficacy of exoskeleton use in the



Patient in therapy using the ReWalk device

restoration of function in the spinal cord injury population. Initially used only for research purposes, both exoskeletons are expected to be available for clinical use in 2013.

In addition, two new robotic exoskeletons expand TIRR Memorial Hermann’s capability to help individuals with spinal cord injury regain the ability to walk.

Emerging research suggests that the spinal cord may be more neuroplastic than we originally thought. As one of only seven designated centers in the Christopher and Dana Reeve Foundation NeuroRecovery Network, TIRR Memorial Hermann is participating in an innovative research strategy to develop and deliver effective therapies to individuals with SCI. One such therapy is an intensive activity-based rehabilitation treatment called locomotor training, which uses a treadmill and body weight support provided through a special harness. Patients are suspended over the treadmill, while therapists help them move their feet in stepping motions. They repeat the movements and, over time, gradually begin to bear more weight.

The goal of locomotor training is to harness the innate ability of the spinal cord to map motor pathways and awaken dormant pathways that allow individuals with SCI to relearn motor activity. Locomotor training optimizes sensory cues to the body in an attempt to awaken the nervous system and create new pathways for neural signals. While the activity focus is walking, the goal of the training is improving the overall quality of life for patients who qualify. To qualify for locomotor training, individuals must have a non-progressive incomplete spinal cord injury that does not involve the lower motor neurons. ♦

# Residents' Quality Improvement Projects Aim to Improve Care

Five teams of residents at TIRR Memorial Hermann are engaged in quality improvement projects that will benefit patients by streamlining processes for greater efficiency and improving the quality of care.

Under the leadership of chief resident for quality improvement and research **Miguel Escalon, M.D., M.P.H.**, 33 residents at the Baylor/UTHealth Alliance for Physical Medicine and Rehabilitation are implementing change, tracking results and learning to work together in teams. "An understanding of quality improvement processes is a core competency of residency programs required by the Accreditation Council of Graduate Medical Education. The essence of quality improvement is to streamline quality of care," Dr. Escalon says. "We've asked our residents in postgraduate years two, three and four to select an area in which they see opportunities for quality and efficiency improvements. TIRR Memorial Hermann has been very helpful in providing us with the guidance and tools we need to be effective at completing the projects."

**Sarah Lake Wallace, Pharm.D.**, clinical effectiveness director for quality, patient safety and infection control for the rehabilitation region of Memorial Hermann, is available to answer questions, provide quality and outcome measurement tools, and help the residents narrow the scope of their projects. "Each group selected something they felt needed to be added

**T**IRR Memorial Hermann has been very helpful in providing us with the guidance and tools we need to be effective at completing the projects.

in the hospital setting," Wallace says. "The projects help them understand that teamwork is the best way to accomplish goals and give them an idea of how difficult performance improvement can be to accomplish and sustain. It helps them understand their role within an institution beyond patient care. It improves the hospital by helping us understand these processes from a different point of view, and it will help all hospitals by making new physicians advocates for improvement. We hope they'll carry the desire to improve to their next institution."

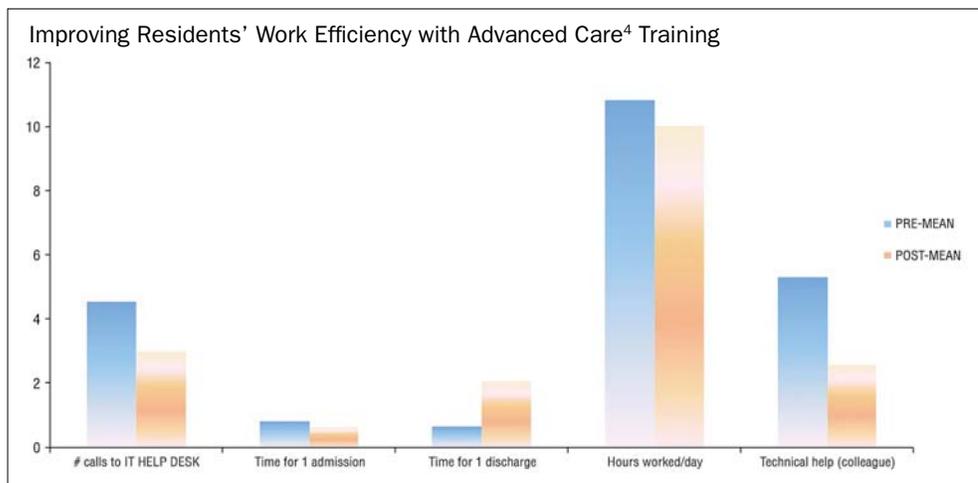
The residents make an oral presentation of methodology and results in early spring, and in the summer they hosted an open-house poster presentation at TIRR Memorial Hermann. Projects presented this year include: Efficacy of an Educational Sign on Hand-washing Compliance (Joseph Amos, M.D., Jess Arcure, M.D., Adam Dailey, M.D., Craig DiTommaso, M.D., Miles Kilroy, M.D., Margaret Oni, M.D., and Laurie Yablon, M.D.); Improving Resident Sign-out with a Secure Online System (Rachel Zeider, M.D., Ameet Nagpal, M.D., Karina

Bouffard, M.D., Benjamin Mega, M.D., Sunny Dhah, M.D., and Marie Frando, M.D.); Increasing Venous Thromboembolism Form Compliance (Sheng Li, M.D., Angelica Soberon, M.D., Christopher Falco, M.D., Michael McGehee, M.D., Matthew Roh, M.D., McCasesy Smith, M.D., Mary Beth Russell, M.D., and Waheed Baksh, M.D.); Improving Residents' Work Efficiency with Advanced Care<sup>4</sup> Training (Charles DeMesa, M.D., James Lewis, M.D., Jorge Perez-Lopez, M.D., Varsha Gillala, M.D., Amruta Ashketar, M.D., Viola Hysa, M.D., Miguel Escalon, M.D., and Anand Allam, M.D.); and

It improves the hospital by helping us understand these processes from a different point of view, and it will help all hospitals by making new physicians advocates for improvement. We hope they'll carry the desire to improve to their next institution.

Central Line/PICC Policies (Omer Munshi, M.D., Sara Goel, M.D., Matthew Co, M.D., Paul Pezzino, M.D., and Monika Patel, M.D.). Faculty advisers for the teams are **Meilani Mapa, M.D., Rochelle Dy, M.D., Sunil Kothari, M.D., Jeffrey Berliner, D.O.,** and **Martin Grabois, M.D.**

The 2012-13 academic year marks the second year of the residents' quality improvement program. Projects under way this academic year are focused on protecting resident lecture time, increasing the percentage of patients who receive their discharge medication prescriptions 48 hours prior to discharge, improving the quality of the paging process during overnight call, improving resident sign-out and improving the compliance rate of PVR/bladder scan recording into the electronic record through implementation of a standardized protocol. ♦



# The Importance of C.R.R.N. Credentialing

By Mary Ann Euliarte, R.N., C.R.R.N.

According to research conducted by the *American Journal of Nursing* in 2001, certified nurses reported fewer adverse events and errors in patient care than before they were certified. They felt more confident in their ability to detect the early signs and symptoms of complications and begin earlier interventions when required. They also reported more job satisfaction and a greater sense of personal growth. A later study, completed in 2007 by the Association of Rehabilitation Nurses (ARN), reported improved outcomes associated with certification in the field of rehabilitation.

Certified nurses reported fewer adverse events and errors in patient care than before they were certified. They felt more confident in their ability to detect the early signs and symptoms of complications and begin earlier interventions when required. They also reported more job satisfaction and a greater sense of personal growth.

Five years ago, TIRR Memorial Hermann began an internal campaign to encourage our nurses to get certified. At that time only 4 percent of our eligible registered nurses were certified rehabilitation registered nurses. Today, that number is 45 percent, and 90 percent of nursing management at TIRR Memorial Hermann holds the credential.

The benefits of certification to the individual are enormous. As the market gets tighter, it differentiates nurses in the competition for jobs. According to the ARN, earning and maintaining the C.R.R.N. credential shows employers, colleagues and patients that nurses take pride in their work and value personal achievement, have achieved a symbol of professional development and recognition, and are committed to caring for indi-

viduals with physical disability or chronic illness as they work toward the restoration, maintenance and promotion of optimal health. Certification is the gold standard for nursing; when you hire a C.R.R.N., you know you've hired a nurse with a passion for rehabilitation.

The institution also benefits from employee and public recognition that it hires the most knowledgeable and skilled nurses available. To qualify for the certification, nurses have to work in the rehabilitation setting for two years and sit for an intense exam that tests their knowledge of rehabilitation as it relates to the laws of disability, nursing theory and actual clinical care. If you pass, you join the ranks of the many proud nurses who add the credential to their names.

Earning the C.R.R.N. is becoming the expectation in our field and has caught on at TIRR Memorial Hermann, evidenced by some friendly competition among our nurses. It's not uncommon to hear new hires say that they're planning on taking the C.R.R.N. exam as soon as they're eligible. When I hear this, I know I have a great employee – a nurse who loves rehabilitation and will stay with us for a long time.

I'm also proud that the majority of our nurses who hold the C.R.R.N. credential are active in their professional association, the ARN. Their commitment is evident in so many ways. On a national level, their involvement keeps the specialty practice of rehabilitation nursing at the forefront, and while they're promoting their own practice, they are also promoting TIRR

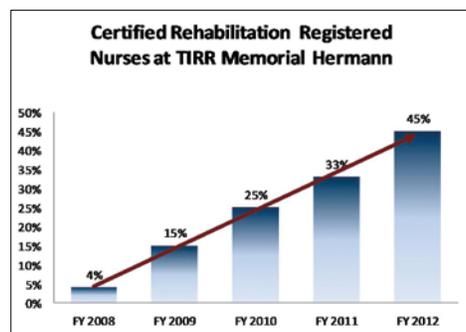
Nationally, the involvement of our credentialed nurses keeps the specialty practice of rehabilitation nursing at the forefront, and while they're promoting their own practice, they are also promoting TIRR Memorial Hermann to their colleagues.

Memorial Hermann to their colleagues.

We report our nursing quality indicators to the National Database of Nursing Quality Indicators (NDNQI). Although there are currently no reliable methods to compare nursing quality results and patient outcomes to certification, we expect to have benchmarks in the future. Anecdotally, I can say that in early September we completed our Joint Commission survey with no recommendations for improvement in our patient care areas.

TIRR Memorial Hermann is ranked third in the nation among rehabilitation hospitals. I'd like us to be top-ranked in nursing as well. The more nurses who earn the C.R.R.N. certification, the closer you are to the gold. A lofty goal would be 100 percent. Realistically, I think we can reach 60 percent by 2014. ♦

*Mary Ann Euliarte is chief nursing officer and chief operating officer at TIRR Memorial Hermann and chief nurse for Rehabilitation Services across the Memorial Hermann Healthcare System. She earned her C.R.R.N. credential in 2010.*



# Former TIRR Memorial Hermann TBI Patient Kara Beatty Graduates from Medical School

An automobile accident changed the lives of two sisters interested in medicine, crystallizing their career paths. One graduated from The University of Texas Health Science Center at Houston (UTHealth) Medical School in December; the other is now an occupational therapist working at Memorial Hermann Southwest Hospital.



*Kara and her sisters at graduation*

Their life-changing journey began on June 19, 2002. During the summer after her freshman year of college at Texas A&M, Kara Keuthan Beatty was on her way to summer school at a community college when a truck ran a red light and T-boned her car. She lost consciousness, and emergency responders had to use the “jaws of life” to free her from the wreckage. Transported to Ben Taub General Hospital, she remained in a coma for three days in the Neurotrauma ICU, with

a moderate traumatic brain injury, two fractures of the pelvis, fractured ribs, a lacerated spleen and a collapsed lung.

A week later she was transferred to TIRR Memorial Hermann. “When I first arrived, I was unable to walk, write or identify objects,” Beatty says. “While in physical therapy I worked on my balance and gross motor skills. In occupational therapy, I was challenged with writing and other activities requiring fine motor skills. In speech therapy I worked on words and their meanings.”

During Beatty’s stay in the rehabilitation hospital, her mother was constantly by her side. When her mother had to leave to attend a funeral in Ohio, her sister, Julie Keuthan, stayed with her to provide support during therapy sessions.

“I was 17 when Kara went to TIRR Memorial Hermann, and I was making the decision of what I wanted to do for a career,” Keuthan says. “I always knew I wanted to work in the medical field. When I went to occupational therapy with Kara, I thought it was the coolest thing. I knew this was what I wanted to do.”

Beatty was discharged after three weeks, and participated for six months in the TIRR Memorial Hermann Challenge Program, which provides specialized services focused on community re-entry skills that are critical for the transition

to independent living, school or work following brain injury. She returned to Texas A&M in the spring of 2003.

Inspired by her attending physician at TIRR Memorial Hermann, physical medicine and rehabilitation specialist **Sunil Kothari, M.D.**, an assistant professor of PM&R at Baylor College of Medicine, Beatty pursued her dream of becoming a doctor. She is currently applying for residency programs in neuropsychiatry with a start date of July 2013.

“I chose this field based on my interest in human behavior and the interactions I’ve had with fellow TBI survivors while volunteering at TIRR Memorial Hermann’s Brain Injury Research Center,” she says. “I want to work with patients who are working to overcome some form of brain injury.”

Julie Keuthan completed her bachelor’s in health science and her master’s in occupational therapy at Texas Tech University in December 2009. She says of her sister, “Her determination to stick with it and keep going forward is what impressed me the most. She’s been an inspiration for me. It’s been very tough for her. She was only 19 at the time of the accident. When I think things are difficult in life, I look at Kara and think what I’m going through is a piece of cake.” ♦

## Xtreme Camping for Kids with Disabilities

Twenty-five campers with physical disabilities spent a week last summer pushing their limits at TIRR Memorial Hermann’s Camp Xtreme. For up to 12 hours a day, they participated in archery, kayaking, horseback riding, scuba diving, a ropes/challenge course, handcycling, wheelchair ultimate Frisbee, water polo, and wheelchair basketball, football and softball.

“Camp Xtreme is an opportunity for kids with disabilities to experience the true summer camp experience without the limitations they might find at other camps,” says **Genny Gomez, C.T.R.S.**, adaptive sports coordinator at TIRR Memorial Hermann and co-director of Camp Xtreme. “We believe that every individual, despite physical disability or mobility impairment,

has a right to physical recreation, wellness and participation in sporting events. Our goal is to help our campers develop a higher level of independence through role modeling and self-discovery as they participate in the sports of their choice.”

Campers, who range in age from 8 to 21, take part in three or four activities

*Xtreme Camping continues on page 11*

# Construction Update: TIRR Memorial Hermann Research Institute Move-in Scheduled for 2013

When construction is completed on the TIRR Memorial Hermann Research Institute this summer, all of the rehabilitation hospital's research endeavors will come together under one roof adjacent to the hospital, allowing for further integration of research and clinical care.



“TIRR Memorial Hermann is unique among rehabilitation providers in the region as a center for research and education, as well as clinical care,” says **Carl Josehart**, CEO. “We have a long history of dedication to advancing rehabilitation through research. The new Institute represents a long-term commitment to expanding those endeavors and is a sign in this time of

healthcare reform that we're confident enough to invest in the future.”

Currently, research programs in spinal cord injury, brain injury and the UTHealth PM&R Motor Recovery Laboratory at TIRR Memorial Hermann are housed in several locations, including leased space outside the Texas Medical Center. With the support of philanthropists who contributed to the Memorial Hermann Foundation's Revolutionizing Neuroscience campaign, TIRR Memorial Hermann is renovating a vacant building adjacent to the main hospital facility to consolidate all research resources on the main Campus.

“We believe in discussion, exchange of ideas and cross-pollination between research and clinical care,” says **Gerard Francisco, M.D.**, chief medical officer at TIRR Memorial Hermann and chair of the department of Physical Medicine and Rehabilitation at The University of Texas Health Science Center at Houston (UTHealth) Medical School. “Having all of our researchers working on their various projects in one building will promote tremendous synergy between researchers

from different disciplines and programs, and create an integrated Campus that addresses all of the critical components of care and services in a single location.”

Renovation of the 42,600-square-foot facility will provide space to accommodate all research programs as well as some support departments and other services currently housed in the hospital. “Research thrives at TIRR Memorial Hermann and warrants a separate location,” Josehart says. “Demand for the care provided through our clinical programs is growing, and the space in the hospital currently used for research is now needed for patient care and expansion of our clinical programs, hospital-based physician outpatient clinics and other specialty care services.”

Josehart adds that the research institute will be connected to the hospital by a second-story bridge. “The bridge serves a physical purpose, but it's also a visible reminder of the transfer of knowledge from the lab to the bedside and back to the lab for further refinement.” ♦

## TIRR Memorial Hermann To Sponsor Houston Disabilities Film Festival 2013

TIRR Memorial Hermann is the lead sponsor for Houston's first citywide film festival promoting awareness and appreciation of the lives, stories and artistic expressions of individuals with disabilities. Scheduled for Feb. 6 through 13 at selected venues across the city, ReelAbilities will feature five shorts and 10 full-length films showcased in at least five venues, plus opening- and closing-night receptions, panel discussions with guest filmmakers, educational program-

ming and special non-film programs including visual and performing arts.

Jewish Family Service (JFS) and its Alexander Institute for Inclusion were selected as the host city organizers by the national ReelAbilities Film Festival. “We've chosen to present the event as our premier educational program to celebrate the agency's 100th anniversary,” says Lauren Mielziner, event coordinator for JFS. “The vision of the Alexander Institute for Inclusion, which is the

educational arm of JFS Disability Services, is to foster a community that includes all individuals by eliminating the stigma associated with disabilities. Our goal is to bring about a systemic change in the culture of our families, institutions, places of work and communities to become more inclusive of adults and children with disabilities.”

**B**egun in New York in 2007, the festival brings communities together to explore, discuss and celebrate the diversity of shared human experiences. Houston is the sixth city to be invited to participate in the project.

**Robotics** continued from page 1

TIRR Memorial Hermann, incorporates sophisticated feedback that allows the patient to work as much as possible while the device gently assists – and sometimes resists – movement to build strength and accuracy.

At the University of Houston, a team led by principal investigator José Contreras-Vidal, Ph.D., director of the UH Laboratory for Noninvasive Brain-Machine Interface Systems and a professor of electrical and computer engineering, is developing the electroencephalograph-based neural interface. Dr. Contreras-Vidal's team was the first to successfully reconstruct 3-D hand and walking movements from brain signals recorded noninvasively using an EEG brain cap. The technology allows users to control robotic legs with their thoughts and also permits below-elbow amputees to control neuroprosthetic limbs. The new project will be one of the first to design a brain-machine interface (BMI) system for stroke survivors.

Initially, the combined device will be tested in healthy subjects to study its capability to translate brain waves into control outputs to move the exoskeleton. Later, the study will enroll stroke survivors who have some ability to initiate movements to prompt the robot into action.

The two initial study populations will allow the team to refine the EEG-robot interface before enrolling a clinical population of stroke patients who have no residual upper-limb function.

“The capability to harness a user’s intent through the EEG neural interface to control robots makes it possible to fully engage the patient during rehabilitation,” Dr. Contreras-Vidal says. “Putting the patient directly ‘in the loop’ is expected to accelerate motor learning and improve motor performance. The EEG technology will also provide valuable real-time assessments of plasticity in brain networks due to the robot intervention – critical information for reverse engineering of the brain.”

The four institutions bring unique perspectives to the project. Rice University’s robotic devices and UH’s neural interfaces will make it possible for principal investigator **Gerard Francisco, M.D.**, chief medical officer at TIRR Memorial Hermann and director of the UTHealth PM&R Motor Recovery Lab at TIRR Memorial Hermann, and his team to facilitate translational research that will fast-track engineering findings into clinical practice.

“This is truly an opportunity to demonstrate how various technological advances have the potential to boost traditional rehabilitation therapists,”

The grant will fund the development of neurotechnology that will interpret the brainwaves of stroke patients, allowing them to use their thoughts to operate an exoskeleton that wraps around the arm from the fingertips to the elbow.

says Dr. Francisco, who is professor and chair of the department of Physical Medicine and Rehabilitation at the UTHealth Medical School. “What makes this initiative even more exciting is that the National Robotics Initiative recognized the value of our collaborative effort by awarding this grant to multiple principal investigators. This project will be among the first to investigate the benefits of combined therapeutic interventions to help stroke survivors.”

The project, entitled “Brain-Machine Interface (BMI) Control of a Therapeutic Exoskeleton” and funded through the National Institute of Neurological Disorders and Stroke (NINDS), is one of only a few projects selected by the NRI, a collaborative partnership of the NIH, National Science Foundation, NASA and the Department of Agriculture, to encourage the development of the next generation of robots that will work closely with humans. ♦

More than 3,000 people are expected to participate in the weeklong festival. TIRR Memorial Hermann has agreed to coordinate the print, radio, television and social media for the event, which is endorsed by the Houston Mayor’s Office for People with Disabilities. Other sponsors include the Bristow Group (ReelEducation Diamond Sponsor), and the Lewis and Joan Lowenstein

Foundation and Wong Cabello (Platinum sponsors).

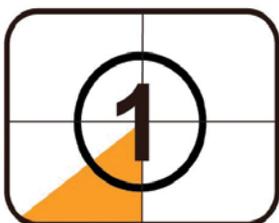
“We’re proud to sponsor this innovative cultural arts program focused on encouraging the expression of the human spirit regardless of physical or intellectual limitations,” says **Carl Josehart**, CEO of TIRR Memorial Hermann. “We invite you to join us in this opportunity to increase awareness of the skills and

talents of people with disabilities.”

Begun in New York in 2007, the festival brings communities together to explore, discuss and celebrate the diversity of shared human experiences. Houston is the sixth city to be invited to participate in the project.

Isabelle and Eric Mayer, JFS past president, are chairing ReelAbilities Houston. The event’s advisory committee includes a broad range of nonprofit organizations in both the disabilities and cultural arts communities.

For more information about the film festival, visit [www.jfshouston.org/ReelAbilities](http://www.jfshouston.org/ReelAbilities). ♦



# Profiles in Caring: Angelle Sander, Ph.D.



Angelle Sander, Ph.D.

In the fall of 1989, **Angelle Sander, Ph.D.**, was a graduate student at the University of Houston, completing the first practicum for her doctorate in clinical neuropsychology at TIRR

Memorial Hermann. By then, she knew her research interests were the issues facing caregivers of patients with traumatic brain injury (TBI) and community reintegration after TBI. Seven years later, after completing a postdoctoral fellowship in rehabilitation psychology and neuropsychology at the Medical College of Virginia, she returned to the Houston rehabilitation hospital, bringing with her the Mary E. Switzer Fellowship Grant, an award made to her as an individual by the National Institute on Disability and Rehabilitation Research (NIDRR).

“TIRR Memorial Hermann provided me with opportunities I wouldn’t have had elsewhere,” says Dr. Sander, who is director of the Brain Injury Research Center (BIRC) at the hospital. “I had connections there from my student days and was drawn back especially because of the community integration work being done in the Challenge Program, which provides specialized services focused on community re-entry skills that are critical for the transition to independent living, school or work following brain injury. Most of my research revolves around the return to home for TBI patients and the skills they need to make their lives work again. TIRR Memorial Hermann was one of the first institutions in the country with a comprehensive community reintegration program, and at that time the BIRC and Challenge Program were housed in the same facility. The ability to interact with the Challenge Program staff and do research with patients in the program was important to me.”

Dr. Sander knew she was headed toward a career in research between the first and second years of her master’s in clinical psychology at Emporia State University in Kansas. In the summer of 1992, she completed an internship at Oklahoma Health Sciences Center under renowned neuropsychologist Oscar Parsons, Ph.D., whose research focused on the impact of alcoholism on brain function. “Until then, I thought I’d be a clinician only, but Dr. Parsons inspired my interest in research,” she says. “That’s also when I decided I wanted to be a neuropsychologist.”

When she arrived at TIRR Memorial Hermann with the Mary E. Switzer grant, Walter High, Ph.D., former director of the BIRC, gave her space for her research, which focused on family needs, coping and psychological health following TBI. During her first year there, she wrote and was awarded another one-year grant, this time from the National Academy of Neuropsychology for a study entitled “Experimental Utility of a Script Analysis Task for Predicting Vocational and Psychological Outcome After TBI.” At the same time, she was co-investigator with Walter High, Ph.D., of a five-year NIDRR grant – “Effectiveness of a Comprehensive Rehabilitation Services Program for Individuals with TBI.” Her research career had taken off.

From 1998 to 2002, she was principal investigator of an NIDRR-funded study called “Impact of Family Environment on Patient and Family Outcome After TBI: A Multicenter Study.” TIRR Memorial Hermann was the lead center for the study, conducted with Methodist Rehabilitation Center in Jackson, Miss., and the Mayo Clinic in Rochester, Minn. Beginning in 1999, she served as director of research and project principal investigator on a five-year NIDRR Rehabilitation Research and Training Center (RRTC) grant on interventions in traumatic brain injury.

By 2003, she was principal investigator of TIRR Memorial Hermann’s third

five-year RRTC grant on community integration in persons with traumatic brain injury. Work on grants in conjunction with other colleagues at the hospital followed, and in 2008 she assumed the role of director of the BIRC.

Dr. Sander’s current research includes a multicenter study on sexual functioning after TBI, which was published in August in the *Archives of Physical Medicine and Rehabilitation*<sup>1</sup>. Three more related papers on sexual and endocrine functioning after TBI will appear in the second 2013 issue of the *Journal of Head Trauma Rehabilitation*, which she is co-editing.

“The interdisciplinary environment at TIRR Memorial Hermann is important to my research,” she says. “It gives me the opportunity to have input from people in a variety of disciplines as I plan grant proposals, and to apply the results quickly in the treatment setting. That input allows me to plan studies so that they will yield the most useful results clinically. It’s very rewarding to share information with caregivers and see it used daily in their work with patients.” ♦

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*Dr. Sander 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. She has published more than 50 peer-reviewed articles and made more than 40 presentations nationally. She serves as an editorial board member of the Journal of Head Trauma Rehabilitation.*

<sup>1</sup>Sander AM, Maestas KL, Pappadis MR, Sherer M, Hammond FM, Hanks R and the NIDRR Traumatic Brain Injury Model Systems Module Project on Sexuality After TBI. Sexual functioning 1 year after traumatic brain injury: Findings from a prospective traumatic brain injury model systems collaborative study. *Archives of Physical Medicine and Rehabilitation*. 2012 Aug;93(8):1331-7.

*Xtreme Camping* continued from page 7

each day during the weeklong event. Cabin counselors, many of whom have overcome the barriers and challenges they faced with their own disabilities, serve as adult role models to help the campers as they transition to adulthood. More than 20 volunteers serve the camp each year – a ratio of two volunteers to each camper.



*Archery practice at Camp Xtreme*

“Quite a few of our campers have grown up and transitioned to volunteer counselors themselves, which is something I’ve really enjoyed watching,” says Gomez, who has worked with the camp for the past seven years. Co-director Eric Lantz, O.T.R., an occupational therapist at Seton Hospital in Austin, Texas, has logged nine years with Camp Xtreme.

Cabin counselors, many of whom have overcome the barriers and challenges they faced with their own disabilities, serve as adult role models to help the campers as they transition to adulthood.

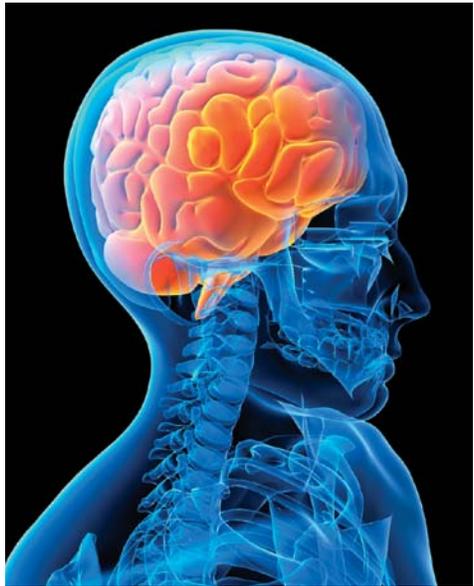
Young people with spinal cord injury, spina bifida, lower-extremity amputations and other spinal disorders are invited to apply for Camp Xtreme. “Campers must be self-motivated to try new experiences and have the ability to propel a wheelchair during sports and recreational activities,” Gomez says.

Camp Xtreme is generously supported by the W. T. & Louise J. Moran Foundation, TIRR Memorial Hermann, Houston Parks and Recreation, USA Paralympics, and Texas Adaptive Aquatics. For more information, visit [www.campxtreme.com](http://www.campxtreme.com) or call 713.797.5997. ♦

## ON THE MOVE

### TIRR Memorial Hermann Receives NIDRR Texas TBI Model System Grant

TIRR Memorial Hermann’s Brain Injury and Stroke Program has been designated a Traumatic Brain Injury Model System (TBIMS) with funding from the National Institute on Disability and Rehabilitation Research (NIDRR). A research program for recovery sponsored by the U.S. Department of Education, NIDRR’s TBI Model System Program awards funds to 16 sites around the country to conduct research aimed at improving quality of care and outcomes for patients recovering from TBI. TIRR Memorial Hermann was one of the original model system sites and has been funded since 1987.



The five-year model system designation and \$2.2-million grant will be used to contribute to the TBI Model Systems database, conduct a clinical trial of a psychotherapy intervention for persons with TBI and participate in one or more multicenter studies among TBIMS sites, to be determined. **Mark Sherer, Ph.D., A.B.P.P., F.A.C.R.M.**, senior scientist and director of research, and **Angelle Sander, Ph.D.**, director of the Brain Injury Research Center, are grant co-principal investigators.

### TIRR Memorial Hermann to Lead Rehabilitation Across the Memorial Hermann System

To ensure that all Houstonians have access to the same high-quality, evidence-based rehabilitation care, TIRR Memorial Hermann is taking a lead role in setting standards that will be maintained across the Memorial Hermann system.

“As healthcare reform challenges organizations to provide high-quality care to large populations of patients, TIRR Memorial Hermann is creating a comprehensive, integrated service line



of care beyond the Texas Medical Center to outlying communities where people live and work,” says Carl Josehart, who has been named system executive for rehabilitation services. “The reorganization is a logical extension of our commitment to help our patients return to the community after disabling injury or illness, and live their lives to the fullest extent possible. Rehabilitation happens not just in the hospital but also in the community. Extending our reach to Houston’s outlying communities is a responsible way to bring needed services as close to people as possible.”

A shared leadership structure and organization as a single unit will raise the standard of rehabilitative care across the entire population that Memorial Hermann serves, Josehart says. Memorial Hermann hospitals and rehabilitation providers currently share a common electronic health record that improves safety, quality and cost efficiency by

*On the Move* continues on page 12

*On the Move* continued from page 11

sharing data to eliminate the potential for duplication of tests and other potential waste of resources.

In addition to his responsibilities as chief medical officer at TIRR Memorial Hermann and professor and chair of the department of Physical Medicine and Rehabilitation at The University of Texas Health Science Center at Houston (UTHealth) Medical School, **Gerard Francisco, M.D.**, will serve as chair of the systemwide Rehabilitation Clinical Practice Committee, a medical directors' forum to discuss issues, develop clinical protocols and quality measures, and assess outcomes. Chief nursing officer and chief operating officer **Mary Ann Eullarte, R. N., C.R.R.N.**, will serve as chief rehabilitation nurse to standardize nursing practice and protocols across the System and, with Josehart, will co-chair the System Rehabilitation Council, which includes leaders throughout the System who are collaborating to share best practices and find ways to better serve the community. Other TIRR Memorial Hermann employees and departments have also assumed systemwide leadership roles in their areas of expertise.

## O'Malley To Lead Rehabilitation Engineering at TIRR Memorial Hermann

**Marcia K. O'Malley, Ph.D.**, has joined the staff of TIRR Memorial Hermann as director of rehabilitation engineering. In her new role, she will advance engineering and technology research at the rehabilitation hospital and build relationships with new collaborators within and outside the Texas Medical Center.

Dr. O'Malley is an associate professor in the department of Mechanical Engineering and Materials Science and director of the Mechatronics and Haptic Interfaces (MAHI) Lab at Rice University, and a co-founder of Houston Medical Robotics. She holds a joint appointment in computer science at Rice and is an

adjunct associate professor in the departments of Physical Medicine and Rehabilitation at Baylor College of Medicine and The University of Texas Health Science Center at Houston (UTHealth) Medical School.

Dr. O'Malley's research interests focus on the issues that arise when humans



*Marcia K. O'Malley, Ph.D.*

physically interact with robotic systems. One thrust of her lab at Rice is the design of haptic feedback and shared control between robotic devices and their human users for training and

rehabilitation in virtual environments. Psychophysical studies have provided insight into the effect of haptic cues on human motor adaptation, skill acquisition and the restoration of motor coordination.

"We're very pleased to have Marcie serving in an official role at TIRR Memorial Hermann," says **Gerard Francisco, M.D.**, who has collaborated with her on projects for the last four years. "We've been strong collaborators, learning from each other both on the technical and clinical sides. For the first two or three years, we conducted some small studies to help better understand our needs and perspectives. When we got the grant from Mission Connect to create the MAHI Exo-II, it gave us a great opportunity to pool resources and work in the relatively unexplored field of applying robotics to improve upper-limb function after spinal cord injury."

The MAHI Exo-II features a customizable assist-as-needed architecture that allows patients to perform prescribed tasks. When they reach the limit of their ability, the robotic device allows for assisted or fully supported performance of tasks based on a real-time performance assessment. A clinical study using the device is currently under way at TIRR Memorial Hermann.

In 2008, Dr. O'Malley received the

George R. Brown Award for Superior Teaching at Rice University. She is a 2004 Office of Naval Research Young Investigator and the recipient of the NSF CAREER Award in 2005. She has served as chair of the IEEE Technical Committee on Haptics and as an associate editor for the IEEE Transactions on Haptics and currently serves on the editorial board of the ASME/IEEE Transactions on Mechatronics.

## TIRR Memorial Hermann Welcomes New Physicians

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

**David B. Arciniegas, M.D., F.A.N.P.A., F.A.P.M., C.B.I.S.T.**, comes to TIRR Memorial Hermann as senior scientist and medical director for brain injury research. He



*David B. Arciniegas, M.D., F.A.N.P.A., F.A.P.M., C.B.I.S.T.*

was recruited jointly by Baylor College of Medicine, where he is executive director of the Beth K. and Stuart C. Yudofsky Division of Neuropsychiatry, holds the Beth K. and Stuart C. Yudofsky Chair in Brain Injury Medi-

cine, and is a professor in the Menninger Department of Psychiatry and Behavioral Sciences.

After receiving his medical degree at the University of Michigan in 1992, Dr. Arciniegas completed an internship in community medicine at the University of Colorado School of Medicine (UC-SOM) in 1993, where he subsequently served as a resident in psychiatry and chief resident in consultation-liaison psychiatry until 1996. During his final year of residency training, he was awarded a competitive research grant by the U.S. Department of Veterans Affairs for a three-year fellowship in neuroscience research and traumatic brain injury at the Denver

Veterans Affairs Medical Center, which he undertook concurrent to a three-year fellowship in neuropsychiatry and clinical neuroscience research at UC-SOM. After completing his fellowships, he was awarded a traumatic brain injury-focused Research Career Development Award by the Department of Veterans Affairs, joined the faculty of the departments of Psychiatry and Neurology at UC-SOM, and was appointed medical director of the Brain Injury Unit at HealthONE Spalding Rehabilitation Hospital in Aurora, Colorado. At the time of his recruitment to TIRR Memorial Hermann, Dr. Arciniegas was a tenured associate professor of psychiatry and neurology and the Michael K. Cooper Professor of Neurocognitive Disease at UC-SOM.

Dr. Arciniegas is the recipient of numerous awards and honors, holds editorial posts with multiple scientific journals, and is on many federal and private foundation scientific review panels. He is president of the International Brain Injury Association, scientific program chair of the American Neuropsychiatric Association, a member of the Executive Committee of the International Neuropsychiatric Association, a fellow of the Academy of Psychosomatic Medicine and a member of the Advisory Board of the Society for Cognitive Rehabilitation.

**Suzanne Manzi, M.D., F.A.A.P.M.R.**, comes to TIRR Memorial Hermann after working in Reno, Nevada, where she started the Renown Health Outpatient Interventional Psychiatry Department. She also works at the Pain Management Center of Houston, where she serves as medical



*Suzanne Manzi, M.D., F.A.A.P.M.R.*

director of the electrodiagnostic laboratory. She completed her residency at the Baylor/UTHealth PM&R Alliance in 2009, followed by a fellowship in interventional spine, electrodiagnostic medicine and pain management at Michigan State University, associated with Lansing Orthopedics, in 2010. She

received her medical degree from St. George's University School of Medicine in Grenada, West Indies.

Dr. Manzi founded the Outpatient Interventional Pain program at TIRR Memorial Hermann and is a clinical assistant professor at The University of Texas Health Science Center at Houston (UTHealth) Medical School. She is a member of the American Academy of Physical Medicine and Rehabilitation, American Association of Neuromuscular and Electrodiagnostic Medicine, American Academy of Pain Medicine, International Spine Intervention Society and the Texas Pain Society. She is board certified by both the American Board of Physical Medicine and Rehabilitation and the American Board of Electrodiagnostic Medicine.

**Elaine Magat, M.D.**, joins the TIRR Memorial Hermann physician team from the department of Physical Medicine and Rehabilitation at Scott and White Healthcare in Temple, Texas, and from Scott and White's Center for Rehabilitative Medicine in Waco, Texas, where she was assistant medical director. After receiving her medical degree at the



*Elaine Magat, M.D.*

University of Santo Tomas Faculty of Medicine and Surgery in Manila, Philippines, she completed two physical medicine and rehabilitation residencies -

one at the Veterans Memorial Medical Center in Quezon City, Philippines, in 2003, where she was chief resident, and the second at the Baylor/UTHealth PM&R Alliance in 2010. She completed her fellowship in brain injury rehabilitation and tone management at the Alliance in 2011.

A clinical assistant professor of PM&R at the UTHealth Medical School and a diplomate of the American Board of Physical Medicine and Rehabilitation, Dr. Magat will work at the hospital's Outpatient Medical Clinic. She is a member of the American Academy of Physical

Medicine and Rehabilitation and the American Medical Association.

## TIRR Memorial Hermann Sponsors Workshop on Brain-Machine Interface Systems

TIRR Memorial Hermann has joined the National Institutes of Health and The Methodist Hospital Research Institute (TMHRI) in sponsoring the 2013 International Workshop on Brain-Machine Interface (BMI) Systems. Organized by the University of Houston (UH), the workshop will be held at TMHRI in the Texas Medical Center on February 24 through 27, 2013.

The workshop will bring together experts and discussion leaders at the forefront of BMI research involving the central and peripheral nervous systems. Discussion will center around best approaches for uncovering basic mechanisms and implementing and validating BMI systems technology for clinical applications; scientific, engineering and regulatory challenges that affect clinical use of BMIs; and the needs of patients who could benefit from the new neuro-technology.

Conference chair is José Contreras-Vidal, Ph.D., director of the UH Laboratory for Noninvasive Brain-Machine Interface Systems, who is one of three principal investigators working with TIRR Memorial Hermann, Rice University and The University of Texas Health Science Center at Houston (UTHealth) Medical School to develop and validate a robotic exoskeleton with a noninvasive brain-wave interface. **Gerard Francisco, M.D.**, is a member of the workshop's executive committee. For more information, please email [jlcontreras-vidal@uh.edu](mailto:jlcontreras-vidal@uh.edu) or visit the conference website, [www.bmiconference.org](http://www.bmiconference.org). ♦

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**Li S**, Park W-H, Borg AM. Phase-dependent respiratory-motor interactions in reaction time tasks during rhythmic voluntary breathing.

*Motor Control*, 2012. Epub: PMID: 22643317.

**Sander AM**, Bogner J, Nick TG, Clark AN, Corrigan JD, Rozzell M. A randomized controlled trial of brief intervention for problem alcohol use in persons with traumatic brain injury. *Journal of Head Trauma Rehabilitation*, 2012;27:319-30.

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**Thomas H**. Learning new ways to communicate: Pastoral care for patients with aphasia. *Plain Views*, 2012;9(10). ♦

## ACCOLADES

### Former Residents Named Among Texas Rising Stars

Three recent graduates of the Baylor College of Medicine/UTHealth Alliance for Physical Medicine and Rehabilitation have been named among the Texas Super Doctors® Rising Stars<sup>SM</sup>. **Brian Bruel**, M.D., **Edward A. Nash**, M.D., and **Meilani Mapa**, M.D., all completed residency



*Meilani Mapa, M.D.*

training at TIRR Memorial Hermann.

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.

All three physical medicine and rehabilitation specialists practice in Houston. Dr. Bruel is assistant professor in the department of Pain Management at The University of Texas MD Anderson Cancer Center; Dr. Nash practices at the KSF Orthopaedic Center, P.A.; and Dr. Mapa is a clinical assistant professor in the department of PM&R at The University of Texas Health Science Center at Houston (UTHealth) Medical School and a member of the TIRR Memorial Hermann medical staff.

**Gerard Francisco**, M.D., was elected a member of the UTHealth Medical School Academy of Master Educators (AME). In addition to being outstanding teachers, faculty inducted into AME use medical education processes and strategies that involve pursuit of innovation and

scholarship with documented impact.

**Gerard Francisco**, M.D., **Martin Grabis**, M.D., and **Cindy Ivanhoe**, M.D., have been named to *U.S. News & World Report's* list of Best Doctors 2012.

**Ann Gutierrez**, R.N., M.S.N., C.R.R.N., has been named among the Texas Nurses Association District 9's Top 20 Outstanding Nurses for 2012. She was honored at TNA's 22nd Annual Nursing Celebration in Houston on November 8.

**Angelle Sander**, Ph.D., has been awarded a five-year National Institutes of Health grant to study quality of life in caregivers of traumatic brain injury.

**Heather B. Taylor**, Ph.D., is principal investigator of a \$2.65 million Department of Education Institute of Educational Services grant awarded to the



*Heather Taylor, Ph.D.*

UTHealth Medical School with a subaward to TIRR Memorial Hermann. Co-investigators for the four-year grant, Enhancing Early Learning for Infants with Disabilities: A

Responsive Parenting Intervention, are **Susan Landry**, Ph.D., **Marcia Barnes**, Ph.D., **Cathy Guttentag**, Ph.D., and **Paul Swank**, Ph.D. TIRR Memorial Hermann researchers include **Kristine Higgins**, **Michelle Feltz** and **Zulma Cadena**. ♦

## ON THE PODIUM

**Arciniegas D**. The Neuropsychology of Pathological Affect. Invited lecture presented at a CME event of the Houston Psychiatric Society, Houston, September 2012.

**Arciniegas D**. Attention and Memory Problems after Mild Traumatic Brain Injury: New Perspectives on an Old Problem. Invited lecture at Advances in Clinical Psychiatry, a CME event co-sponsored by the Baylor College of Medicine and the Menninger Clinic,

Baylor College of Medicine, Houston, September 2012.

**Arciniegas D.** Brain Injury: State of the Field Report. Invited lecture at The State of the States in Cognitive Disability and Technology: 2012 Annual Review and Forecast, the Twelfth Annual Coleman Institute National Conference, Westminster, Colorado, November 2012.

**Arciniegas D.** Neuropsychiatric Assessment during Inpatient Rehabilitation after Traumatic Brain Injury. Invited lecture to the 4th European Congress of the International Neuropsychiatric Association, Athens, Greece, November 2012.

**Chernyshev OY**, Moul DE, Liendo C, McCarty DE, Caldito G, Besliu S, Munjampalli SK, Kelley R, Chesson A. The Cardiopulmonary Study as an Early Sleep Apnea Screening Tool in Acute Ischemic Stroke. Presented at



*Oleg Y. Chernyshev, M.D., Ph.D.*

Sleep 2012 Boston, 26th annual meeting of the Associated Professional Sleep Societies, Boston, June 2012.

Critchfield EA, Nakase-Richardson R, **Sherer M**, Barnett SD, Evans CC. Does Early Neuroimaging Predict Duration of PTA Among Neurorehabilitation Admissions? Paper presented to the American Psychological Association, Orlando, Florida, August 2012.

**Cuellar L.** The Next Generation of Pharmacy Leaders: Creating Your Leadership Legacy. The Robert L. Boblitt Rho Chi Lecture for the University of Houston College of Pharmacy, UH Law Center, Houston, September 2012.



*Lourdes Cuellar, R.Ph., F.A.S.H.P.*

**Davis K.** Activity Stations for the Brain-Injured

Patient. Presentation at the 2012 Association of Rehabilitation Nurses 38th Annual Educational Conference, Nashville, Tenn., October 2012.

**Del Castillo T.** Assessment and Treatment of TBI from a Behavioral Health Perspective. Invited address at the 36th Annual Conference of the National



*Edward Elms, M.D.*

Association of Social Workers, Texas Chapter, Houston, September 2012.

**Elms E.** Making Assistive Technologies More Accessible to the Consumer.

Invited presentation at the Little People of America's National Conference, Dallas, July 2012.

**Euliarte MA.** Daily Discharge Huddles: A Rapid Response Initiative to Improve Patient Satisfaction with



*Mary Ann Euliarte, R.N., M.S.N., M.B.A., C.R.R.N.*

the Discharge Process. Presentation at the 2012 Association of Rehabilitation Nurses 38th Annual Educational Conference, Nashville, Tenn., October 2012.

**Gutierrez A.** Providing Culturally Competent Education for Patients of Hispanic Origin. Presentation at the 2012 Association of Rehabilitation Nurses 38th Annual Educational Conference, Nashville, Tenn., October 2012.

**Ifejika-Jones NL.** Stroke Complications and Rehabilitation. Keynote speech presented at the UTHealth Medical School Family Medicine Grand Rounds, Houston, October 2012.

**Ifejika-Jones NL.** Facing the Post-Stroke Continuum: Outcomes, Expectations and Future Objectives. Keynote speech presented as part of the Mischer Neuroscience Institute Stroke Team Community Outreach Initiative at the Angleton-Danbury Stroke Support Group,

Angleton, Texas, October 2012.

Yen J, Li S. Force Perception in Hemiparetic Stroke. Presentation at the Society for Neuroscience, New Orleans, October 2012.

**Roberts D, Davis K.** Patient Safety is No Accident. Presentation at the 2012 Association of Rehabilitation Nurses 38th Annual Educational Conference, Nashville, Tenn., October 2012.

**Sander AM.** Multicultural Issues in Brain Injury Rehabilitation. Invited lecture presented at the conference Rehabilitation Topics in the Management of Brain Injury. Cedars-Sinai Physical Medicine and Rehabilitation, Los Angeles, September 2012.

**Sherer M.** Impaired Sense of Self.



*Mark Sherer, Ph.D.*

Invited address given at the Black Hills Brain Injury Conference. Rapid City, SD, September 2012.

**Sherer M, Sander AM.** Assessment and Management of Cognitive Impairments in

TBI Rehabilitation. Invited workshop at the meeting of the American Psychological Association, Orlando, Fla., August 2012.

**Taylor HB, Robinson-Whelen S, Hughes R, Nosek M.** Pain and Women with Spinal Cord Injury, Multiple Sclerosis, Joint Connective Tissue Disorders and other Physical Disabilities. American Congress for Rehabilitation Medicine,



*Lisa Thomas, R.N., C.R.R.N.*

Vancouver, British Columbia, Canada, 2012.

**Thayer VR, Thomas L, Gutierrez A.** Reliability of Temporal Thermometers in Spinal Cord Patients. Presentation at the 2012

Association of Rehabilitation Nurses 38th Annual Educational Conference, Nashville, Tenn., October 2012. ♦



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## M MESSAGE FROM THE CEO

In physical medicine and rehabilitation we strive for more than saving lives. We



*Carl E. Josehart, CEO*

work closely with our patients from the acute stage of rehabilitative care to community reintegration and a return to lives that are as full and complete as possible.

Last September, former TIRR Memorial Hermann patient Gabrielle Giffords led the Pledge of Allegiance at the Democratic National Convention, an act that would have been inconceivable a decade ago given the

magnitude of her injury. While remarkable recoveries are not yet attainable for all of our patients, former Congresswoman Giffords' return demonstrates the promise of rehabilitation. This is why research focused on advancing our field is so important: what was once thought of as impossible is now within the realm of possibility.

In this issue you'll read about Kara Beatty, M.D., who arrived at TIRR Memorial Hermann in 2002 unable to walk, write or identify objects following a traumatic brain injury. In December 2012, she received her medical degree at The University of Texas Health Science Center at Houston (UTHealth) Medical School.

Our physicians, scientists, therapists, nurses and staff have dedicated ourselves to helping people like Dr. Beatty push through limitations. Our investment in the TIRR Memorial Hermann Research Institute, which will allow all of our researchers to collaborate under one roof, moves us one step closer to that goal. Through research, we'll see more people surviving and thriving. The successes of our patients inspire us, but the fight won't be over until remarkable recoveries become possible for ever-greater numbers of people.

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

### 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 neuromuscular disorders.

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.