

# JOURNAL

THE INSTITUTE FOR REHABILITATION AND RESEARCH

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## PRACTiS: A Portable Robotic-Assisted Device Opens New Doors to Upper-Limb Motor Recovery Following Stroke

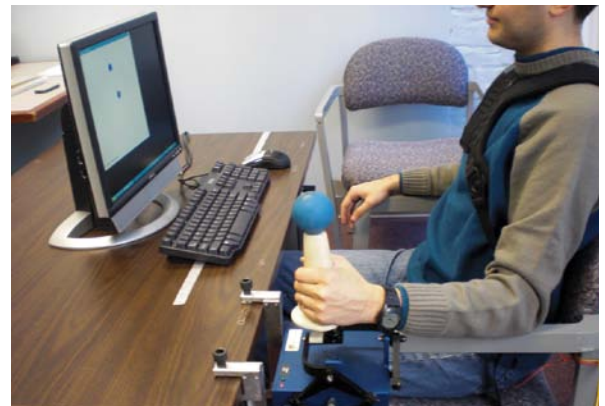
**C**ONVENTIONAL WISDOM IN neurorehabilitation has long held that virtually all progress toward recovery is made very early following stroke. But recent discoveries about the plasticity of the brain and its ability to reorganize itself after injury are leading physicians, therapists and researchers to view stroke recovery as an ongoing process with no time limit.

“We’re discovering that there’s an unknown quantity of unused potential in patients post stroke, that they can continue to improve for many months and possibly years after injury, and that greater improvements are feasible when therapy is more intensive, even in people with chronic stroke,” says **Corwin Boake, Ph.D.**, a neuropsychologist at TIRR Memorial Hermann and associate professor of physical medicine and rehabilitation at The University of Texas Medical School at Houston.

Dr. Boake is the lead researcher in a pilot study called Portable Robotic-Assisted Constraint Therapy in Stroke (PRACTiS), which evaluated a new rehabilitation protocol combining constraint-induced therapy (CIT) and robotic technology to treat hand weakness secondary to stroke. Begun in 2006, PRACTiS was funded by a \$150,000 grant from Mission Con-

nect, a collaborative research effort led by TIRR Foundation, and a previous grant from the Vivian L. Smith Foundation for Neurologic Research.

Researchers from TIRR, Baylor College of Medicine, Rice University and the UT Medical School had recently completed a trial on CIT and were



reviewing results when Rice University’s **Marcia O’Malley, Ph.D.**, approached them with the idea of designing a robotic-assisted device for use with stroke patients. Dr. O’Malley is an assistant professor of mechanical engineering and a frequent collaborator with TIRR on device-related research and application.

Based on input from TIRR therapists, Dr. O’Malley and her students

*PRACTiS continues on page 4*

## FEATURED IN THIS ISSUE

### **Suzanne Andrews, O.T.R., A.T.P.**

Manager, Outpatient and Day Rehabilitation at TIRR Memorial Hermann Kirby Glen

### **Corwin Boake, Ph.D.**

Neuropsychologist at TIRR Memorial Hermann Associate Professor of PM&R, The University of Texas Medical School at Houston

### **Allison Clark, Ph.D.**

Investigator at TIRR Assistant Professor of PM&R, Baylor College of Medicine

### **Lourdes Cuellar, M.S., R.Ph.**

Director of Pharmacy and Clinical Support Services at TIRR

### **Lynne Cole Davis, Ph.D.**

Clinical Neuropsychologist at TIRR Clinical Assistant Professor of PM&R, Baylor College of Medicine

### **William H. Donovan, M.D.**

Interim Medical Adviser of the TIRR Spinal Cord Core Groups and Director of the Spinal Cord Fellowship

### **Brenda Eames**

TIRR Librarian

### **Mary Ann Euliarte, R.N.**

Chief Nursing Officer/Chief Operating Officer at TIRR

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

Chief Medical Officer at TIRR Chair of the Department of PM&R, The University of Texas Medical School at Houston

### **Carl Josehart**

TIRR CEO

### **Cindy Ivanhoe, M.D.**

Attending Physician in TIRR's Brain Injury and Stroke Program Associate Professor of PM&R, Baylor College of Medicine Adjunct Associate Professor, The University of Texas Medical School at Houston

### **Lee Livingston, Psy.D.**

Clinical Neuropsychologist at TIRR Assistant Professor of PM&R, Baylor College of Medicine

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

Assistant Professor of Mechanical Engineering, Rice University

### **Laura Ritter, Ph.D.**

Assistant Professor of PM&R, Baylor College of Medicine

### **Angelle Sander, Ph.D.**

Director of the Brain Injury Research Center (BIRC) at TIRR Associate Professor of PM&R, Baylor College of Medicine

### **Mark Sherer, Ph.D.**

Senior Scientist, Director of Research and Director of Neuropsychology at TIRR Clinical Professor of PM&R, Baylor College of Medicine

### **Margaret Struchen, Ph.D.**

Research Scientist at TIRR Assistant Professor of PM&R, Baylor College of Medicine

### **Dehuti Pandya, Pharm.D, B.C.P.S.**

Clinical Pharmacist at TIRR

### **Stephen Yang, M.D.**

Medical Director, Acute Inpatient Rehabilitation Unit, Memorial Hermann-Texas Medical Center Clinical Assistant Professor of PM&R, The University of Texas Medical School at Houston

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

Research Scientist, Department of PM&R, The University of Texas Medical School at Houston

## MESSAGE FROM THE CEO

TIRR Memorial Hermann's pledge to transform the lives of people with disabilities is backed by a comprehensive research program whose ultimate goal is to improve the physical, social and emotional health of the people



*Carl E. Josehart, CEO*

who entrust their care to us. To that end, we incorporate research into everything we do at TIRR.

In July of last year, we welcomed our first class of neurologic physical therapy residents, in collaboration with Texas Woman's University and The University of Texas Medical Branch at Galveston. Already, our two residents have implemented clinical research projects. One aims to establish the self-efficacy beliefs of individuals with spinal cord injury and their caregivers at discharge from inpatient rehabilitation, and determine whether programs at TIRR can influence these beliefs, leading to improved quality of life at discharge. The other is focused on developing a locomotor training program for

individuals with acquired brain injury to ascertain whether such a program can be incorporated into an inpatient treatment model for improved patient outcomes.

Our nurses stay ahead of the curve by quickly adapting innovative equipment and research findings to patient care, such as the implementation of ResQPOD®, which you'll read about in this issue. They review the literature continuously to stay abreast of new treatments and evaluate their applicability at TIRR. You'll find the same commitment to state-of-the-art care driven by research among all disciplines at our facility.

TIRR was founded on the belief that people with even the most severe disabilities could attain a state of health and functional ability and return to active lives in their communities. In pursuit of that goal, physician, therapist and nurse researchers throughout the institution are lifting the hopes of patients and families by helping them find the path to more rewarding lives.

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

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Winter 2010

## Patty Tilton Improves with PRACTiS

IT WAS LATE 2008 WHEN PHYSICAL medicine and rehabilitation specialist **Gerard E. Francisco, M.D.**, approached **Patty Tilton** about participating in a pilot study called PRACTiS (Portable Robotic-Assisted Constraint Therapy in Stroke). Tilton, a patient of Dr. Francisco's, was receiving Botox® injections to help control the muscle spasticity she experienced following stroke.

"I was fascinated by the science behind therapy and rehabilitation, even though I'm not a science person," Tilton says. "When I was offered an opportunity to be involved in groundbreaking research, I jumped at the chance. But my motive was not completely altruistic. I had been in rehab for a very long time, and I thought I could benefit from a new therapy."

Following a right-side hemorrhagic stroke on October 31, 2007, Tilton underwent six weeks of inpatient neurorehabilitation and spent three months in the TIRR Challenge Program. By the time she learned about PRACTiS, she had been enrolled in outpatient therapy at TIRR Memorial Hermann Kirby Glen for eight months. She was enthusiastic about participating in the pilot study, which was evaluating a new rehabilitation protocol combining constraint-induced therapy (CIT) and robotic technology to treat hand weakness secondary to stroke.

Under the direction of **Nuray Yozbatiran, Ph.D.**, a research scientist in the department of Physical Medicine

and Rehabilitation at The University of Texas Medical School at Houston, Tilton underwent a two-hour baseline assessment of her left arm that included range of motion testing, manual muscle testing and the Fugl-Meyer Assessment of Motor Function. "During her baseline assessment, Patty demonstrated independence in most of the activities of daily living (ADL), but she tended to compensate with her unaffected hand," Dr. Yozbatiran says. "She had minimal movements in her impaired arm, but none were functional. For instance, she could bend her wrist up and down but couldn't pick up a washcloth or a cup, or open and close the refrigerator door."

Over the next four weeks, Tilton participated in 36 hours of therapy, 60 percent of which was CIT. The remaining 40 percent was robotic assisted, in which she used a cone-shaped joystick to move a disc-shaped cursor on the computer screen between a series of targets arranged around a 'home' position. The robotic-assisted device, user interface and software were designed in the laboratory of **Marcia O'Malley, Ph.D.**, an assistant professor of mechanical engineering at Rice University and frequent collaborator with TIRR researchers.

"My upper body was constrained, and I had to push a joystick - which seemed to me like a gear shift in a manual transmission car - up to 12, over to 3, down to 6 and over to 9," Tilton says. "You did that by looking at the computer screen with two dots

and moving the first dot to the second dot. It sounds easy but it was so incredibly difficult."

Tilton, who also completed three hours of therapy each week at home wearing a mitten on her affected hand, considered constraint-induced therapy very helpful. "You get to a point in your recovery where you realize that you can't perform tasks with your affected hand, so you start figuring out other ways to do them. Constraint-induced therapy forces you to rethink your entire approach. I couldn't do things perfectly, but eventually I did tasks well enough to be functional and get the job accomplished."

"Patty was very committed to the study," Dr. Yozbatiran says. "She scored higher on her post-treatment assessment in all movement-related tests. In terms of ADL, she had begun to use her left hand to turn on a light switch, pick up a cup by its handle and carry a water bottle in her hand."

Tilton is more reserved about her progress. "Let's just say that as a high-strung overachiever who wants to be back where she was before the stroke, I'm not happy that I'm not there yet. But I am pleased that I made progress. I was very pleased with the process and would do it again if I could."

She encourages therapists to be open to new techniques and stick with patients when they plateau. "If we're motivated, we'll make progress. Don't give up on us." ♦

## TIRR Memorial Hermann Awarded a Rehabilitation Research and Training Center Grant

A grant funding the Rehabilitation Research and Training Center (RRTC) on Developing Strategies to Foster Community Integration and Participation for Individuals with Traumatic Brain Injury (TBI) has been awarded to researchers at TIRR Memorial Hermann by the National Institute on Disability and Rehabilitation Research (NIDRR). The award of \$4.2 million will fund three research projects and five training projects over the next five years. Principal investigator for the RRTC is **Angelle Sander, Ph.D.**, director of the Brain Injury Research Center (BIRC) at TIRR and associate professor of physical medicine and rehabilitation at Baylor College of Medicine.

The three projects, which will begin recruiting in 2010, will target underserved populations who for various reasons are not participating in rehabilitation following brain injury. “Nationwide, many people who receive neurosurgical care after TBI do not have the financial resources to receive rehabilitation,” Dr. Sander says. “For the most part they are not insured. Through the RRTC, we’re targeting interventions to reach these people.”

The projects are: “Contextualized Training for Memory Impairment Following TBI: A Multi-center Randomized, Controlled Trial Investigating Impact on Community Integration and Functional Memory Tasks,” with co-principal investigators Dr. Sander and **Laura Ritter, Ph.D.**, assistant

professor of physical medicine and rehabilitation at Baylor College of Medicine. This dual-center study, conducted in conjunction with the Rehabilitation Institute of Michigan at Wayne State University, will train caregivers and persons with injury in the use of an individualized memory intervention, matched to each person’s needs and preferences. The intervention will be delivered in the home, and participants will be recruited through the department of Neurosurgery at Ben Taub General Hospital.

**Lynne C. Davis, Ph.D.**, clinical neuropsychologist at TIRR and clinical assistant professor of physical medicine and rehabilitation at Baylor College of Medicine, is principal investigator for “Improving Employment Outcomes Through Partnership: A Randomized, Controlled

*RRTC Grant continues on page 5*

*PRACTiS continued from page 1*

redesigned a commercially available joystick into a cone shape to accommodate stroke patients with impaired ability to grasp. A user interface and software for patient robotic training were also developed in Dr. O’Malley’s lab at Rice.

“We’re excited about the project on many levels,” Dr. Boake says. “There is strong evidence that constraint-induced therapy is an effective intervention for increasing motor function in the affected arm and hand after stroke. Because treatment intensity has such a profound effect on motor recovery, the use of robotics is well suited to improving rehabilitation outcomes. The study also demonstrates the potential for

collaboration between physicians and therapists in the medical field and faculty and students working in basic science at universities.”

Dr. Boake and his research team are currently analyzing data and compiling results gathered on the study’s 10 participants with a long-range goal of seeking funding for a larger randomized controlled clinical trial. Preliminary data suggests that outcomes with the combined robotic-plus-CIT protocol are similar to the CIT protocol without robotics, suggesting no apparent loss of efficacy. All 10 participants improved in arm movement performance tests following treatment and maintained their

improvement in follow-up testing done one month later.

“Today, access to therapy is limited for many patients. Robotics for rehabilitation has the potential to allow them to continue intensive therapy in venues outside the hospital and clinic, offering new opportunities to people without insurance, transportation or access because of geographic location,”

Dr. Boake says. “When devices like those created for PRACTiS and similar projects become commercially available, stroke patients will be able to work on their motor skills at home with family, which will improve long-term rehabilitation outcomes.” ♦

**D**R. O'MALLEY AND HER STUDENTS REDESIGNED A COMMERCIALY AVAILABLE JOYSTICK INTO A CONE SHAPE TO ACCOMMODATE STROKE PATIENTS WITH IMPAIRED ABILITY TO GRASP.

Trial of a Case Coordination System to Facilitate Resource Utilization and Successful Completion of State Vocational Rehabilitation Services.” The trial will enroll participants through the Memorial Hermann-Texas Medical Center department of Neurosurgery and facilitate their relationship with the Texas Department of Assistive and Rehabilitative Services (DARS). The control group will be randomized for DARS referral; the second group will receive a DARS referral and extended coordination services.

**Mark Sherer, Ph.D.**, director of research and director of neuropsychology at TIRR and clinical professor of physical medicine and rehabilitation at Baylor College of Medicine, is the principal investigator for “Development and Validation of a Classification System of Symptoms and Characteristics to Guide Treatment Assignments for



Mark Sherer, Ph.D.

Persons with TBI Living in the Community.” The project will develop a Web-based classification system that will ultimately be

used to recommend persons with TBI for the type of treatment likely to provide the greatest benefit. Participants will be recruited at three centers following discharge from neurosurgery and inpatient rehabilitation programs: TIRR, Rehabilitation Institute of Michigan at Wayne State University and Spain Rehabilitation Center at the University of Alabama at Birmingham.

**Allison Clark, Ph.D.**, assistant professor of physical medicine and rehabilitation at Baylor College of Medicine and an investigator at TIRR, will direct five training projects. The projects will

develop online educational workshops for people with TBI and their caregivers, partner with community organizations to increase social networking opportunities, train healthcare and educational professionals in the needs of persons with TBI and how to adapt services for them, provide training in the use of the Internet for social networking, and offer training for clinicians on

the Web-based classification system developed in the third research project.

“We’re very proud of the Brain Injury Research Center for their innovative research projects and for receiving significant new funding to support these initiatives,” says **Carl Josehart**, TIRR CEO.

For more information on the RRTC projects, please call Dr. Sander at 713.630.0516. ♦

## Jared Dunten Discovers a Passion for Painting

A former TIRR Memorial Hermann patient builds a new life after spinal cord injury, discovers his passion for painting and starts Will Walk, a foundation focused on finding a cure.



Jared Dunten

Five of his prints reproduced on canvas will hang in the hallways at TIRR and two will hang at TIRR Memorial Hermann Kirby Glen.

**Jared Dunten** is determined to paint himself out of his wheelchair. In April 2000, while on a camping trip in the Chisos Mountains in Big Bend National Park, Dunten dove into the Rio Grande with a bar of soap to clean himself up – and hit a sandbar. He woke up in an intensive care unit

in Lubbock, Texas, paralyzed from the neck down and breathing with the help of a ventilator. The impact had broken his neck at C4 and C5 and injured his spinal cord. His close friend and hiking companion, Marty Butler, pulled him out of the river and saved his life.

“In the hospital in Lubbock I was fighting pneumonia and a decubitus ulcer I developed while in the ICU,” Dunten says. “Some said I would never breathe on my own or even speak again. But after about a month and a half, I began to recover.”

Flown by air ambulance to TIRR Memorial Hermann for rehabilitation, he fought his way off the ventilator and, after another month and a half, began breathing on his own. “It was touch and go for me as far as therapy goes,” he recalls. “The ulcer was very bad and took a long time to heal.” Dunten underwent three surgeries to close the ulcer while at TIRR, which at that time was still running an operating room.

“With the ulcer and recovery from the surgeries, Jared had a lot to overcome when he began therapy,” says **Suzanne Andrews, O.T.R., A.T.P.**, his occupational therapist at TIRR. “After a high-level spinal cord injury, you’re starting with the basics. He had to learn to move into an upright

*Jared Dunten continues on page 6*

position after being in bed for months. Typically, when you begin sitting up for the first time in a long time, there are blood pressure issues to overcome. Once we got him sitting comfortably, we worked on finding the wheelchair



"Mom's Thistle" by Jared Dunten

that was best for him, as well as the appropriate cushion to help with circulation and prevent skin breakdown.

"What I remember most about Jared was the overwhelming support he had from family and friends," says Andrews, who is now manager of outpatient and day rehabilitation at TIRR Memorial Hermann Kirby Glen. "The support of family and friends, in my opinion, makes or breaks a rehabilitation stay. As a therapist, knowing that your patient is leaving TIRR with a high level of support makes you feel better because you've seen the hands they're going home to, you know that the good care will continue and you know that, ultimately, they'll be okay."

In 2002, encouraged by his mother, Dunten began to paint using his mouth. In 2004, he was awarded a student membership in the Association of Mouth and Foot Painting Artists (AMFPA), a worldwide organization of artists that organizes exhibitions, sells original art works and arranges for publishing houses to reproduce their works as art greeting cards and calendars.

In 2006, Dunten married the love of his life **Kimberly Dunten**. He continues to write for GSD&M, the advertising agency where he worked as a copywriter prior to his injury, and looks forward to the day when he'll walk again. Toward that goal, he and his friends Marty Butler, Adam Butler and Craig Parker founded Will Walk ([willwalk.org](http://willwalk.org)), a foundation that works in conjunction with the Lone Star Paralysis Foundation and other organizations to raise funds for the first U.S. human clinical trial of adult stem cell therapy for spinal cord injury patients. The protocol for the trial is currently in FDA review, and assuming researchers at University Medical Center Brackenridge in Austin win approval, 30 individuals paralyzed by spinal cord injury will be enrolled in the trial in 2010.

"One of the reasons I started painting was to create a platform to let people know that paralysis doesn't have to be permanent," Dunten says. "We will find a cure sooner, rather than later. For me, it's not a question of if, but when. I'm going to paint myself out of this wheelchair."

"Jared says that with such conviction that you have to believe it," says Andrews, who recently renewed her connection with him after losing touch for several years. "When you start out with a mindset of reaching for recovery and also finding a cure - and combine that with the determination that you're going to live life to its fullest - you've got an incredibly powerful mix. Some clinicians recommend not getting too close to your patients, but I think that's what makes TIRR different. We get to know our patients on a personal level. There's great value in that connection." ♦

## ResQPOD Implemented

**T**HE ResQPOD® IMPEDANCE threshold device was recently implemented at TIRR Memorial Hermann as part of an ongoing effort to quickly integrate innovations into clinical care.

The device provides perfusion on demand by regulating pressures in the thorax during states of hypotension. During CPR, the ResQPOD doubles

**A**FTER DEMONSTRATION TO TIRR'S EMERGENCY RESPONSE COMMITTEE, RESQPOD WAS UNANIMOUSLY APPROVED FOR CODE BLUE USE. TIME FROM INVESTIGATION TO IMPLEMENTATION OF THE DEVICE WAS JUST TWO WEEKS.

blood flow to the heart, increases blood flow to the brain by 50 percent, doubles systolic blood pressure, increases immediate survival rates and increases the likelihood of successful defibrillation.

After demonstration to TIRR's Emergency Response Committee, ResQPOD was unanimously approved for Code Blue use. Time from investigation to implementation of the device was just two weeks.

"At TIRR, we practice a team approach to quality and patient safety in which physicians and clinicians collaborate and communicate frequently to enhance patient care," says **Mary Ann Euliarte, R.N., CNO/COO**. "This kind of close collaboration leads to quick decision-making that saves lives." ♦

**TIRR Welcomes New Recruits**

Two physicians and a clinical neuropsychologist have joined the medical staff of TIRR Memorial Hermann and the faculty of Baylor College of Medicine and The University of Texas Medical School at Houston.

**Yi-Wen Michelle Pu, M.D.**, joins TIRR after completing her residency at the Baylor College of Medicine/The University of Texas Medical School at Houston Physical Medicine &



*Yi-Wen Michelle Pu, M.D.*

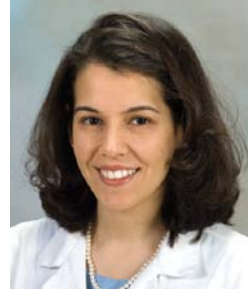
Rehabilitation Alliance. She received her medical degree at National Yang-Ming University School of Medicine in Taipei, Taiwan, in 2001, followed

by an internal medicine residency at Yu-Li Veterans Hospital in Hualien, Taiwan. In 2005, she received her master's in healthcare administration from the Washington University School of Medicine in St. Louis, Missouri. The following year, she completed her preliminary internal medicine year at St. Louis University Hospital in the same city.

Dr. Pu is interim administrative leader of the Neuromuscular and Multi-Trauma Clinical Program and an assistant professor of physical medicine and rehabilitation at Baylor College of Medicine. She is a member of the American Academy of Physical Medicine and Rehabilitation and the Association of Academic Physiatrists, and a contributing editor to *Rehab in Review*. Her clinical and research

interests include spasticity management and electrodiagnostic studies.

**Monica Verduzco-Gutierrez, M.D.**, a clinical assistant professor at the UT Medical School, completed her residency at the Baylor/UT Physical Medicine & Rehabilitation Alliance in July 2009. She received her medical degree in 2005 at Baylor College of Medicine and completed her internship at Baylor's affiliated hospitals the following year.



*Monica Verduzco-Gutierrez, M.D.*

As an attending physician at TIRR, Dr. Verduzco-Gutierrez's primary focus will be on caring for outpatients recovering from traumatic brain injury and neurotrauma. She is a member of the American Academy of Physical Medicine and Rehabilitation, the Texas Medical Association and the Harris County Medical Society. Her clinical interests are neurotrauma and spasticity.

**Veronica J. Lozano, Ph.D.**, joins TIRR as a clinical neuropsychologist. She received her doctorate from the University of Houston's Clinical Psychology Program with a specialty in neuropsychology. She completed her neuropsychology internship, specializing in memory disorders, at Baycrest Centre for Geriatric Care in Toronto, Ontario, Canada. She recently completed her postdoctoral fellowship in clinical neuropsychology at Austin Neuropsychology, PLLC, with a visiting scholar appointment at The University of Texas at Austin department of Psychology.

Dr. Lozano's clinical and research interests include dementia, memory

disorders, stroke, traumatic brain injury and developmental disorders.



*Veronica J. Lozano, Ph.D.*

Her current research is focused on using functional neuroimaging to examine the biological underpinnings of cognitive impairment associated with aging and dementia. She will provide primary coverage to patients on TIRR's neurorehabilitation unit, as well as services to outpatients and Spanish speakers.

**Marie-Claude Roberge, Ph.D.**, is completing the second year of her postdoctoral fellowship in clinical neuropsychology in inpatient services,



*Marie-Claude Roberge, Ph.D.*

having spent her first year working with outpatients at the TIRR Challenge Program. Dr. Roberge received her doctorate in clinical psychology at the University of Ottawa in Ottawa, Ontario, Canada. She has co-authored articles that have been published in *Neuroscience*, *Behavioural Brain Research*, *Physiology & Behavior* and *Neurotoxicology*. Her clinical and research interests include neuropsychological outcomes of traumatic brain injury, stroke and epilepsy, as well as the ecological validity of neuropsychological assessments.

*On the Move continues on page 11*

## TIRR Awarded National Library of Medicine Grant

TIRR Memorial Hermann has received a \$3,000 National Library of Medicine Express Outreach Award to develop classes and resources to assist rehabilitation professionals and consumers in locating reliable health information.

Express Outreach Awards support outreach projects aimed at improving access to the National Library of Medicine's databases of health and biomedical information, including Web sites such as MedlinePlus®, PubMed®, Health Hotlines and clinicaltrials.gov, says **Brenda Eames**, TIRR librarian, who will administer the award.

“Much of the grant will fund an analysis to determine what information current and former TIRR inpatients and outpatients need, and to develop and provide instruction for TIRR staff, patients and families on where

**E**XPRESS OUTREACH AWARDS  
SUPPORT OUTREACH PROJECTS  
AIMED AT IMPROVING ACCESS  
TO THE NATIONAL LIBRARY OF  
MEDICINE'S DATABASES OF HEALTH  
AND BIOMEDICAL INFORMATION

to find information on specific conditions and issues facing those who have suffered catastrophic injury or illness,” Eames says. A portion of the grant will be used to purchase print resources on topics that are not readily available through the National Library of Medicine's databases.

## Donovan To Give Keynote Address

**William H. Donovan, M.D.**, interim medical adviser of the TIRR Spinal Cord Core Groups and director of the Spinal Cord



*William H. Donovan, M.D.*

Spinal Cord Society (ISCoS) to be held in New Delhi, India, Oct. 29-31.

Fellowship, has been invited to present the Ludwig Guttman Memorial Lecture at the 2010 Annual Scientific Meeting of the International

## Boake Receives APA Fellow Recognition

TIRR Memorial Hermann neuropsychologist **Corwin Boake, Ph.D.**, has been



*Corwin Boake, Ph.D.*

named a fellow of the American Psychological Association (APA), Division 22 Rehabilitation Psychology. Dr. Boake was one of about 200 psychologists who were recognized at the APA's annual convention held in Toronto in August.

Fellows are selected based on their record of achievement in the areas of scientific inquiry, professional practice, teaching and training, or leadership and administration. Dr. Boake, an associate professor of physical medicine and rehabilitation

at The University of Texas Medical School at Houston, was cited for “his outstanding contributions to the field of rehabilitation psychology on a national level.”

## Yang Graduates from Physician Quality & Safety Leadership Academy

**Stephen Yang, M.D.**, clinical assistant professor of physical medicine and rehabilitation at The University of Texas Medical School at Houston, was among seven graduates in the second class of the Physician Quality and Safety Leadership Academy, a collaborative effort of Memorial



*Stephen Yang, M.D.*

Hermann-Texas Medical Center and The University of Texas Medical School at Houston. The Academy was developed in 2008 to build a core group of leaders considered experts in this arena.

Dr. Yang was nominated for the Academy by his department chair **Gerard Francisco, M.D.**, and TIRR Memorial Hermann CEO **Carl Josehart**. Highlights of the nine-month course included immersion in Six Sigma methodology and LEAN process, and the opportunity to interact with nationally renowned physician quality advocates including **Brent James, M.D.**, and **Jim Reinertsen, M.D.**

*Accolades continues on page 9*

Projects were selected in conjunction with Academy leaders, and the results of their work were presented at the graduation ceremony on Nov. 18, 2009. Dr. Yang's project was entitled "Developing a Prediction Model for Post-Acute Placement for Trauma Patients."

### Pandya Recognized by Memorial Hermann's Pharmacy Division

**Dehuti Pandya, Pharm.D, B.C.P.S.**, a clinical pharmacist at TIRR Memorial Hermann, was recognized as Employee of the Year by the Memorial Hermann Pharmacy division during National Hospital Pharmacy Week in October.

Pandya was selected from a group of highly qualified pharmacists who



*Perry Flowers, Memorial Hermann System Executive for Patient Care Support and System Pharmacy, presents Dehuti with her award.*

serve the Memorial Hermann system, which includes a network of 11 hospitals and numerous specialty programs and services. ♦

## ON THE PODIUM

**Allison Clark, Ph.D.**, and **Margaret Struchen, Ph.D.** *Early Intervention After Mild Traumatic Brain Injury: A Cognitive-Behavioral Approach*,



*Allison Clark, Ph.D.* presented in the symposium "Efficacy of Using Cognitive-Behavioral Treatment with Individuals with Brain Injury and Their Caregivers" at the annual meeting of the American Congress of Rehabilitation Medicine, Denver, Colorado, October 2009.

**Lourdes Cuellar, M.S., R.Ph.** *Barriers to the Informed Consent Process*, presented at the Meharry School of Medicine, Nashville, Tennessee, September 2009. *Health Literacy Barriers in the Informed Consent Process in Clinical Research*, presented at the Society of Clinical Research Associates National Meeting in Nashville, September 2009. *Preceptor Pearls*, presented at the Annual Preceptor Conference, Texas Southern University College of Pharmacy and Health Sciences in Houston, Texas, October 2009.

**Kerry Davis, R.N.**, and **Ann Gutierrez, R.N., M.S.N., C.R.R.N. R.N.** *Delegation: Practice and Knowledge*, a poster presentation at the Association of Rehabilitation Nurses 35th Annual Educational Conference, Albuquerque, New Mexico, October 2009.

**Lynne C. Davis, Ph.D.** *Gender Differences in Adjustment to Traumatic Brain Injury*,



presented at the 7th Annual Conference on Brain Injury of the North American Brain Injury Society, Austin, Texas, October 2009.

**Ann Gutierrez, R.N.** *Providing Culturally Sensitive Rehabilitation Care for Persons of the Hispanic Culture*, a case study presented at the Association of Rehabilitation Nurses 35th Annual Educational Conference, Albuquerque, New Mexico, October 2009.

**Gerard E. Francisco, M.D.** Course director, faculty and PPC coordinator for *New Insights into Chronic Central Nervous System Damage and Cytoprotective Strategies and Blast-Related, Post-Traumatic Headache and Ophthalmologic Disorders: Diagnosis and Management*, presented at the American Academy of Physical Medicine and Rehabilitation Conference, Austin, Texas, October 2009. Course director for *Advances in the Management of Spasticity and Dystonia* at the same conference.

**Gerard E. Francisco, M.D.**, and **Lee Livingston, Ph.D.** *The Outcomes of Project Victory*, a poster presentation at the American Academy of Physical Medicine and Rehabilitation Conference, Austin, Texas, October 2009.

*On the Podium continues on page 10*

**Cindy Ivanhoe, M.D.** Chair, Progressive Learning CME course on the *Integration of Injection Therapy and Rehabilitation Services*, New York City, November 2009. Faculty member, *Advanced Assessment and*



*Management Skills for Spasticity, Dystonia and Related Motor Disorders: An Interactive, Hands-On*

*Workshop*, at the American Academy of Physical Medicine and Rehabilitation Conference, Austin, Texas, October 2009. Co-chair, *Advanced Management Utilizing ITB Therapy: The Adult and Pediatric Patient*, Orlando, Florida, October 2009. Instructor, *The Minimally Conscious Patient Residency Modules*, TIRR Memorial Hermann, December 2009.

**Angelle Sander, Ph.D.** *Sexuality After Traumatic Brain Injury: Finding the Comfort Zone*, a workshop at the meeting of the North American Brain Injury Society in Austin, Texas, November 2009.



*A Cognitive-Behavioral Group Intervention for Caregivers of Persons with TBI*, presented in the symposium "Efficacy of Using Cognitive-Behavioral Treatment with Individuals with Brain Injury and Their Caregivers" at the annual meeting of the American Congress of Rehabilitation Medicine, Denver, Colorado, October 2009.

**Mark Sherer, Ph.D.** *Phenomenology and Course of Recovery of Acute Confusion After TBI*, presented at the meeting of the American Congress of Rehabilitation Medicine, Denver, Colorado, October 2009.

**Stephen Yang, M.D.** *Complex Regional Pain Syndrome Risk Factors and Treatment*, an invited presentation at the 53<sup>rd</sup> Annual Edward T. Smith Lectureship for The University of Texas Medical School at Houston department of Orthopedic Surgery, October 2009.

*The following TIRR staff members made presentations at the combined American Spinal Injury Association/ Congress on Spinal Cord Medicine and Rehabilitation in Dallas, Texas, in September:*

**Darryn Atkinson, P.T., M.S.** *Scale Structure of the Thoracolumbar Control Scale for Use in SCI*, a poster presentation.

**Michael Gettleman, C.C.C.-S.L.P., M.H.A., M.A., Marcie Kern, P.T., M.S., Brenda Lantz, C.T.R.S., Eric Lantz, O.T.R.** *Project Airport: Airline Travel After Disability*, a platform presentation.

**Candice McCooey, P.T., D.P.T.** *Assessing Effectiveness of a Specialized Group Therapy Program in Increasing Quantity and Quality of Therapeutic Services for Patients on Contact Isolation*, a platform presentation.

**Zach Staats, O.T.R.** *The Effects of Manual Wheelchair Reconfiguration on Chronic Shoulder Pain in a Patient with Paraplegia*, a platform presentation.

**Rafferty Laredo, O.T.R., A.T.P.;**  
**Julie Jennings, P.T., N.C.S.** *Beyond Expectations: Innovative Strategies for Bowel and Bladder Management After Spinal Cord Injury*, a pre-conference course.

*The following poster presentations were made by TIRR Brain Injury Research Center staff at the annual meeting of the American Congress of Rehabilitation Medicine in Denver, Colorado, in October:*

**Angelle Sander, Ph.D., Monique Pappadis, M.Ed., C.H.E.S., C.C.R.P., Allison Clark, Ph.D., Margaret Struchen, Ph.D.** *Perceptions of Community Integration in an Ethnically Diverse Sample.*

**Monique Pappadis, M.Ed., Angelle Sander, Ph.D., Margaret Struchen, Ph.D.** *Validity of the Acceptance of Disability Scale*



*Monique Pappadis, M.Ed.*

*for Persons with Traumatic Brain Injury in an Ethnically Diverse Sample; Relationship of Perceived Attitudinal Barriers and Community*

*Integration to Disability in Persons with Traumatic Brain Injury.*

**Allison Clark, Ph.D., Angelle Sander, Ph.D., Florene Dixon, Research Assistant,**



*Margaret A. Struchen, Ph.D.*

**Margaret Struchen, Ph.D.** *Feasibility of a Group Cognitive Behavioral Therapy for Depressed Mood After Traumatic Brain Injury.* ♦

## Euliarte Named Chief Operating Officer

Chief nursing officer Mary Ann Euliarte, R.N., has assumed a dual role as CNO and COO at TIRR Memorial Hermann, effective December 1, 2009.

Prior to joining TIRR as chief patient care officer in 2007, she was assistant vice president and chief nurse executive at Memorial Hermann Continuing Care Corporation. She has worked in the Houston healthcare



Mary Ann Euliarte, R.N.

market for 25 years and has a broad range of experience in both the acute-care and post-acute settings.

“I’m pleased to be moving forward in this

new position,” Euliarte says. “Having all patient care departments report to the same person helps everyone stay focused on the same initiatives. It will also improve efficiency, communication and support our new Rehabilitation Model of Care.”

“Mary Ann has demonstrated exceptional skill and competence in this dual role on an interim basis, leading Chief Medical Officer Dr. Francisco and I to support her continued career growth, while investing more resources in direct patient care,” says Carl Josehart, TIRR CEO.

A graduate of Sewickley Valley Hospital School of Nursing in Sewickley, Pennsylvania, Euliarte received her bachelor’s in management

of health services at Ottawa University in Kansas City and her M.B.A./H.C.M. (healthcare management) degree from the University of Phoenix.

## Spasticity Management Program Relunched as STAR

**François Bethoux, M.D.**, director of rehabilitation services at the Cleveland Clinic Mellen Center, was guest speaker at the renaming ceremony for TIRR Memorial Hermann’s spasticity management program, held in September. The program was

**T**WO PROJECTS ARE UNDER WAY: A STUDY IN WHICH THERAPISTS AND PHYSICIANS ARE VALIDATING CLINICAL MEASURES OF SPASTICITY AND A SECOND PROJECT IN COLLABORATION WITH TIRR’S NEW MOTOR RECOVERY RESEARCH CENTER.

relunched as the Spasticity Treatment and Research (STAR) Center under the medical direction of **Gerard E. Francisco, M.D.**

Dr. Bethoux’s address, “Spasticity in Multiple Sclerosis,” was the inaugural lecture in an ongoing biannual education series established to mark the launch of STAR.

STAR’s objective is to maintain excellence in the clinical management of spasticity and expand research in the field. Two projects are under way: a study in which therapists and physicians are validating clinical measures of spasticity and a second project in collaboration with TIRR’s new Motor Recovery Research Center. ♦

## IN PRINT

*Bold print indicates that the person is affiliated with TIRR.*

**Lourdes Cueller, M.S., R.Ph.** and Diane B. Ginsburg, M.S., R.Ph. *Preceptor’s Handbook for Pharmacists*, 2nd Edition, American Society of Health-System Pharmacists, 2009.

**Gerard E. Francisco, M.D.**, Michael F. Saulino, M.D., Ph.D., Stuart A. Yablon, M.D., Michael Turner, M.D. *Intrathecal Baclofen Therapy: An Update*. American Academy of Physical Medicine and Rehabilitation, 2009.

**Cindy B. Ivanhoe, M.D., P.A.**, and Natasha K. Eaddy-Rose, M.D. *Botulinum Toxin Type A and Post-Stroke Spasticity of the Upper Limbs*. *US Neurology*, Vol. 5, Issue 1, October 2009.

**Angelle Sander, Ph.D.**, Anastasia Raymer, Ph.D., Jeffrey Wertheimer, Ph.D., Diane Paul, Ph.D. *Perceived Roles and Collaboration Between Neuropsychologists and Speech-Language Pathologists in Rehabilitation*. *Journal of Head Trauma Rehabilitation* 2009; 23:1196-1212.

**Mark Sherer, Ph.D.**, Stuart A. Yablon, M.D., Risa Nakase-Richardson, Ph.D. *Patterns of Post-Traumatic Confusional State in Neurorehabilitation Admissions After TBI*. *Archives of Physical Medicine and Rehabilitation* 2009;90:1749-1754.

Risa Nakase-Richardson, Ph.D., Stuart A. Yablon, M.D., **Mark Sherer, Ph.D.**, Todd G. Nick, Ph.D., C. E. Evans. *Emergence from Minimally Conscious State: Insights from Evaluation of Post-Traumatic Confusion*. *Neurology* 2009;73:1120-1126. ♦



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## MESSAGE FROM THE CMO

The location of our new Motor Recovery Research Center directly across from our patient clinic is testimony to our belief in the importance of integrating basic science research and clinical care. Both are fundamental to our mission to transform lives and inspire hope in people whose lives have been significantly altered by illness or injury.



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

At TIRR Memorial Hermann, our research emphasis goes beyond the discovery and application of new techniques and technology. Studies under way are also validating the

efficacy and cost effectiveness of existing therapies and seeking new ways to enhance outcomes using currently available interventions. Under the direction of lead researcher Corwin Boake, Ph.D., a pilot study called Portable Robotic-Assisted Constraint Therapy in Stroke (PRACTiS) has the long-range potential to move intensive rehabilitation from the clinic to the home and improve rehabilitation outcomes. Angelle Sander, Ph.D., who is deeply involved in psychosocial research focused on the impact of traumatic brain injury on patients and their families, is the principal investigator for the new Rehabilitation Research and Training Center (RRTC) on Developing Strategies to Foster Community Integration and Participation for Individuals with TBI. The \$4.2

million NIDRR grant will fund research and training projects targeting underserved populations. These and other research initiatives, including TIRR's designation as one of seven institutions in the country comprising the Christopher and Dana Reeve Foundation's NeuroRecovery Network, are leading to new treatments, and eventually to cures, for spinal cord injury. I look forward to sharing news about new studies that will begin at TIRR in the next few months. I am encouraged by the acceleration of discovery worldwide, which gives us even more reason to hope.

*Gerard E. Francisco, M.D.  
Chief Medical Officer  
TIRR Memorial Hermann  
Chair, Department of Physical Medicine  
and Rehabilitation  
The University of Texas Medical School  
at Houston*

### About TIRR Memorial Hermann

TIRR Memorial Hermann is a 116-bed nonprofit rehabilitation hospital located in the Texas Medical Center in Houston. Founded in 1959, TIRR has been named one of "America's Best Hospitals" by *U.S. News & World*

*Report* for 20 consecutive years. TIRR provides rehabilitation services for individuals with spinal cord injuries, brain injuries, strokes, amputations and neuromuscular disorders. TIRR is one of 11 hospitals in the not-for-profit Memorial Hermann system. An integrated healthcare

system, Memorial Hermann is known for world-class clinical expertise, patient-centered care, leading-edge technology and innovation. The system, with its exceptional medical staff and 20,000 employees, serves southeast Texas and the greater Houston community.