

T I R R M E M O R I A L H E R M A N N

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John Keller's Miracle in Progress

When 33-year-old John Keller was first admitted to TIRR Memorial Hermann on March 26, 2008, he was in a vegetative state. Two hospitalizations and less than a year later, on January 29, 2009, he left the rehabilitation hospital walking and talking.



Keller's road to recovery began on Feb. 17, 2008, when a car struck his motorcycle in McAllen, Texas, and sent him spiraling 150 feet through the air across five lanes of traffic before landing on the pavement. "An eyewitness saw me fly end over end like a helicopter swirling through the air, then hit the pavement on my bottom, fall back and hit my head. I now tell people, 'I didn't go to heaven or hell, I just blacked out,'" he wrote in the introduction to his book *A Miracle on the Road to Recovery*¹, which chronicles his return to function over the two years that followed the accident. On impact, Keller suffered a fractured skull and pelvis and an intracranial hemorrhage resulting in

a severe traumatic brain injury (TBI).

A neurosurgical team at McAllen Medical Center stopped the bleed. Nine days later, he was transferred to a Houston-area hospital, where he remained in the intensive care unit until his admission to TIRR.

"The first days after the accident were difficult," recalls his mother Jan Keller. "John has always been a fighter and strong-willed. We were all fighting for him, and we always believed he would get better. Even though we were devastated when we arrived at TIRR, we knew to keep standing on what we knew God could do instead of what we saw when we looked at him."

Keller's diagnosis on admission was severe TBI, autonomic instability and vegetative state or altered consciousness, says physical medicine and rehabilitation specialist **Luz Tastard, M.D.**, an attending physician in TIRR's Brain Injury, Spinal Cord Injury and Stroke Program. "Our primary goals for his first admission were to increase his level of arousal, determine whether any conditions or medications were preventing him from waking up and teach his family how to take care of him and help him improve."

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FEATURED IN THIS ISSUE

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Medical School at Houston

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Neuropsychologist

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Speech Therapist

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Adaptive Sports Coordinator

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Staff Physical Therapist

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Director of the DBTAC Southwest ADA Center

Marilyn Whisenhunt, C.C.C.-S.L.P.

Speech-Language Pathologist

MESSAGE FROM THE CEO

Those of us who work hand in hand with patients to transform lives interrupted by disability know that rehabilitation is just the beginning. Maximizing independence means taking rehabilitation beyond the walls



Carl E. Josehart, CEO 2010 marks the second year TIRR has participated in a continuing education event focused on the creation of a barrier-free world. Sponsored by the International Interior Design Association, "Understanding the 'Why' Behind Accessible Design" was a sell-out, attended by 65 independent consultants and representatives of architectural design firms and commercial builders who learned how to design for all generations, needs and people. The event is one of many in which our Independent Living Research Utilization (ILRU) program

of the hospital and into the community by breaking down barriers to accessibility wherever they exist.

participates to provide information, training, research and technical assistance in independent living.

In this issue you'll learn how ILRU is partnering with two other Texas Medical Center institutions on a research project that will help raise cancer survivors' awareness of their rights under the Americans with Disabilities Act. You'll also read about steps hospitals can take to remove barriers to full participation in rehabilitation for patients who are deaf and hearing impaired.

We're proud of the commitment of our staff members and their contributions toward the creation of a social environment that makes all aspects of daily life accessible to people with disabilities. Extending our knowledge and resources into the community remains a top priority for us, along with improving outcomes, offering hope and maximizing independence for the people we serve.

Carl E. Josehart
Chief Executive Officer
TIRR Memorial Hermann

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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. 4 rehabilitation hospital, contact Jude Lemaire, recruitment consultant, at 713.797.7281 or Jude.Lemaire@memorialhermann.org. All available opportunities can be viewed at memorialhermann.org.

Toward Accurate Diagnosis and Best-Practices Treatment of Minimally Conscious Patients

In 2009, following a 16-month international study of consensus-based diagnosis of patients with disorders of consciousness, a team of researchers demonstrated that 41 percent of cases of minimally conscious state (MCS) were diagnosed as vegetative state (VS), a condition associated with a much lower chance of recovery. According to the study published in *BMC Neurology*, previous research had reported that up to 43 percent of patients with disorders of consciousness are erroneously assigned a diagnosis of VS.¹

“It takes an experienced clinician to interpret the subtle improvements exhibited by patients transitioning from a vegetative to a minimally conscious state,” says TIRR Memorial Hermann speech therapist **Marilyn Whisenhunt, C.C.C.-S.L.P.** “Because



Marilyn Whisenhunt, C.C.C.-S.L.P.

misdiagnosed patients usually do not get the treatment they need to improve, an erroneous diagnosis means, at best, missed opportunities. In extreme cases, those missed opportunities may lead to life-or-death decisions.”

Identifying MCS is one of the most challenging tasks rehabilitation professionals face while caring for patients with disorders of consciousness. Like patients diagnosed as

vegetative, minimally conscious patients have open eyes and a sleep-wake cycle. “The real hallmark of a minimally conscious state is inconsistent but reproducible goal-directed behaviors such as object recognition, ability to follow commands and the ability to communicate,” Whisenhunt says. “An MCS patient may or may not exhibit contingent emotional responses but if patients do show contingent emotions, they are likely minimally conscious. As they begin to emerge from the state, these behaviors become more functional and more consistent.”

While the ability of patients in MCS to participate in therapy actively is limited, therapy is critical to emergence



Diane Wege, P.T., N.C.S.

from the state, says rehabilitation manager **Diane Wege, P.T., N.C.S.** “Our goal is to provide a comprehensive, integrated, interdisciplinary approach to addressing the unique needs of patients with low levels of responsiveness by optimizing their medical status and facilitating the recovery of consciousness. Often, a medication change reveals that the patient was sedated enough to mask his or her capabilities.”

The attending physician may try neurostimulants to help patients emerge from the minimally conscious state. “We use therapeutic interventions, such as the tilt table for standing programs, and neurodevelopmental techniques to facilitate muscle activation with the patient in various positions such as sitting, tall kneeling and dependent standing, as well as

sitting programs, all of which also help stimulate the reticular activating system and increase alertness,” Wege says. Patients, families and identified caregivers are part of the treatment team, along with physicians, clinical staff and the external case manager.

“Because the diagnosis is difficult and it’s common for people in a minimally conscious state to be diagnosed as vegetative, it’s important



Mark Sherer, Ph.D.

to have a team with experience in treating these patients,” says neuropsychologist **Mark Sherer, Ph.D.** To that end, TIRR is engaged in staff education to ensure that all clinicians recognize the signs of MCS.

“At TIRR Memorial Hermann our program is comprehensive,” says **Monika Shah, D.O.**, director of the Brain Injury and Stroke Program. “We’re



Monika Shah, D.O.

evolving to find better ways to capture and document the subtle changes we see in this patient population and to use research and technological advances to maximize improvement.”

“You need a well-trained eye and a solid knowledge of what to look for – visual tracking, reproducible movement of a finger, an increase in breathing rate,” Whisenhunt adds. “It could be something so small that you’ll miss it without the proper training. We’re also looking for new ways to measure progress with

Diagnosis continues on page 4

TIRR Physician Joins a Medical Mission to Help Haitian Earthquake Victims

Physical medicine and rehabilitation physician and amputation specialist **Danielle Melton, M.D.**, recently extended her practice beyond the walls of TIRR Memorial Hermann and The



Danielle H. Melton, M.D.

University of Texas Medical School at Houston to Haiti, where she spent a week on a medical mission primarily organized through the school's department of Orthopaedic Surgery. It was the first time she had served on a medical mission.

"It was almost accidental that I joined the mission," says Dr. Melton, who was in Haiti from February 26 through March 6. "I ran into some colleagues from the UT ortho group on a Friday afternoon. They told me there was one spot left on the plane to Haiti and suggested I go. 'I can't do it,' I thought. 'I have kids at home and work to do here.' I was scheduled to go to a conference. But I kept thinking about it through the weekend, and when I discussed it with my husband, he encouraged me to go."

By Monday she was confirmed as a member of the team, and by Thursday she was on a flight to Fort Lauderdale. From Florida, the group took a small plane to the town of Cap-Haïtien on

the northern coast of Haiti, and from there, they traveled overland to Milot, where the 70-bed Hôpital Sacré Coeur serves the local population and houses a longstanding medical mission.

"Many of the orthopedic patients from Port-au-Prince had been transported to Milot to be cared for in an established hospital," she says.

"When we first arrived, we were in shell shock from the overwhelming tragedy of the earthquake. Then we started working together as a team to help organize the facility."

Estimates put the number of patients evacuated from Port-au-Prince to the hospital between 200 and 300.

"An accurate census was not available when we arrived," says Dr. Melton, who is director of TIRR's Amputee Program. "Our Texas group created a master census, which showed we had 240 patients, including 58 with amputations and eight with spinal cord injuries. Our surgeons performed nearly 100 procedures over the course of the week."

The spreadsheet, which listed name, diagnosis, medical/surgical treatment and the disposition plan for each patient, became the hand-off communication between medical teams that stayed for just one week

with very little overlap of time.

"Using the compiled information, we were able to devise a plan for transitioning patients to the next step of rehabilitation and placement. Many were medically stable patients who were homeless after the earthquake, so a major focus was planning for the displacement situation."

The Texas Medical Center group used about half the funds they raised for the trip. The remainder will be used for future support, including



The Haiti Ortho team

the development of a prosthetic lab and scheduling of weekly rotations of prosthetists to Milot.

"I learned very quickly that you can't practice medicine like we do in the United States," she says. "Your resources are very limited, and you have to work independently. I learned a lot of lessons about how first responders treat patients. It was an amazing experience – one of the most incredible and memorable of my life. I can see why people keep going back. I hope to do so again too." ♦

Diagnosis continued from page 3

minimally conscious patients because each patient is unique and responses can be so inconsistent. Our overall goal is to create a seamless transition to the next level of

care, whether the choice is home with loved ones or to an environment with more skilled care." ♦

¹ Schnakers C, Vanhauzenhuyse A, Giacino J, Ventura M, Goly M, Majerus

S, Moonen G, Laureys S. Diagnostic accuracy of the vegetative and minimally conscious state: Clinical consensus versus standardized neurobehavioral assessment. *BMC Neurology* 2009, 9:35, doi:10.1186/1471-2377-9-35.

The Life After Cancer Project

TIRR Memorial Hermann's Independent Research Living Utilization (ILRU) is partnering with The University of Texas M. D. Anderson Cancer Center and Memorial Hermann-Texas Medical Center on a research project that will ultimately help raise cancer survivors' awareness of their civil rights under the Americans with Disabilities Act (ADA).

"Studies of disability discrimination complaints filed with the Equal Employment Opportunity Commission clearly indicate that cancer survivors face very different types of discrimination in the workplace than do other disability groups," says **Wendy Wilkinson, J.D.**, director of the DBTAC Southwest ADA Center, the Southwest's leading resource on the ADA and related disability rights



Wendy Wilkinson, J.D.

laws and a program of ILRU and TIRR. "Cancer survivors file greater numbers of complaints over job loss, terms and conditions of employment, wages and demotion than do other disability groups.¹ These same studies also show that cancer survivors file fewer discrimination complaints than other disability groups and file few allegations over denials of reasonable accommodation.² Both studies concluded that cancer survivors experience more actual discrimina-

tion than other groups."

Wilkinson says the studies indicate that cancer survivors are not exercising their civil rights to combat discriminatory employment practices. "Research is needed to understand their levels of awareness of their legal protections under the law, the vocational support programs and services they may be entitled to and the barriers they encounter in maintaining employment and returning to work after a cancer diagnosis."

A literature review conducted as part of the Life After Cancer Project has revealed significant gaps in research on the return to work of cancer patients in four areas: impact of the cancer site on returning to work; impact of surgery, radiotherapy and chemotherapy on employment; the nature of discrimination against cancer survivors in employment; and the impact of social factors at work and their role in the cancer survivor's ability to continue working.

Wilkinson says TIRR's ultimate goal is to take a greater rehabilitative role in transitioning cancer survivors back into the workplace and in defining the role health professionals can play in the process. "It's clear that from the time of diagnosis, survivors need team-based, long-term support in managing their employment opportunities," she says. "Two studies suggested that rehabilitation teams should be public- and private-sector partnerships with support from employers, legal advocates, health-care providers, sponsors of support

services and government agencies. Our goal with the pilot study is to provide a basis for future ILRU proposals to the National Cancer Institute and other prospective sponsors for funding to develop meaningful programs."

To that end, the research partners are preparing a survey that will be used to study M. D. Anderson's staff

preparedness to address discrimination issues faced by cancer patients. "Ultimately, we're hoping to survey cancer populations at M. D. Anderson and Memorial

Hermann-TMC on their knowledge of their rights," says Wilkinson, who in May attended the first meeting of the National Cancer Legal Services Network in New York City. "As rehabilitation professionals, we believe we can apply the knowledge and experience we've gained from helping people return to independence to help cancer patients navigate their lives as survivors."♦

WILKINSON SAYS TIRR'S ULTIMATE GOAL IS TO TAKE A GREATER REHABILITATIVE ROLE IN TRANSITIONING CANCER SURVIVORS BACK INTO THE WORKPLACE AND IN DEFINING THE ROLE HEALTH PROFESSIONALS CAN PLAY IN THE PROCESS.

¹ Feuerstein M, Luff GM, Harrington CB, Olsen CH. Pattern of workplace disputes in cancer survivors: A population study of ADA claims. Published online September 15, 2007, Springer Science+Business Media, L.L.C.

² McKenna, MA, Fabiana E, Hurley JE, McMahon BT, West SL. Workplace discrimination and cancer. CAPS Department, University of Maryland Department of Rehabilitation Counseling, Virginia Commonwealth University. September 19, 2006.

Meeting the Special Needs of the Deaf and Hard of Hearing

Much of the success of a rehabilitation plan of care is dependent on the level of communication established between the patient and his or her therapy team. When deafness or hearing loss interferes with that bond, the patient's return to function may be delayed, says deafness resource specialist Detra Stewart.

"Culturally, deaf people tend to identify with the deaf community," Stewart says. "While it may not be practical for rehabilitation hospitals to have therapists on staff who are themselves members of the deaf community, there are steps rehab professionals can take to improve the experience for deaf, hard-of-hearing, late-deafened and deaf-blind patients."

- Be sensitive to the special needs of deaf, hard-of-hearing, late-deafened and deaf-blind patients in the rehabilitation setting.
- Educate rehabilitation professionals about alternative communication methods and assistive listening devices and services that may be instrumental during the rehab process.
- Have qualified interpreters available who are well grounded in their knowledge of rehab-related issues.

"Our focus at TIRR is on removing barriers to full participation in life for all individuals, including any cultural or linguistic barriers that interfere with the relationship between patient and therapist," says **Carl Josehart, CEO**. "Ultimately, that will mean increasing the overall number of rehabilitation professionals who have the knowledge and skill to serve this population in hospitals across the nation." ♦

ON THE MOVE

TIRR Welcomes New Recruits

Three physicians who are also faculty members at The University of Texas Medical School at Houston have joined the staff of TIRR Memorial Hermann.

An assistant professor in the department of Otorhinolaryngology–Head and Neck Surgery at the UT Medical School and director of the Texas Voice Performance Institute, **Ronda E. Alexander, M.D.**, is a graduate of the Weill Medical College of Cornell University in New York City. After completing her residency at Albert Einstein College of Medicine/Montefiore Medical Center in The Bronx, New York, she completed a fellowship in laryngology and neuro-laryngology at the New York Center for Voice and Swallowing Disorders. Her clinical interests include voice and airway disorders, as well as neurological diseases of the head

and neck. She has training in the use of chemodenervation to treat a variety of disorders including spasmodic dysphonia, blepharospasm, oromandibular dystonia and tremor. She is pleased to extend the otorhinolaryngology department's services to inpatients at TIRR.

Psychiatrist **Deeba Ashraf, M.D.**, earned her medical degree at the UT Medical School and completed her residency in general psychiatry at

Emory University School of Medicine, followed by a fellowship in child and adolescent psychiatry at the same school. An assistant professor in the department of Psychiatry and Behavioral Sciences at UT Medical School, she has held positions at Memorial Health University Medical Center in Savannah, Georgia, and at Michael E. DeBakey VA Medical Center and the Harris County Psychiatric Center in Houston, Texas. She is an attending physician at Children's Memorial Hermann Hospital.

David Wolf, M.D., completed his medical degree, residency and a clinical fellowship in gastroenterology at The University of Texas Medical School at Houston, where he was chief resident in 2005-2006

and chief clinical fellow in 2008-2009. An assistant professor in the department of Internal Medicine, division of

Gastroenterology, Hepatology and Nutrition, Dr. Wolf is also director of UT's Gastroenterology Outpatient Clinical Program, associate program director for the Gastroenterology Fellowship Program and associate program director for the Internal Medicine Residency. His clinical interests include Barrett's esophagus, GERD, irritable bowel syndrome, inflammatory bowel disease and therapeutic endoscopy.

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THREE PHYSICIANS WHO ARE ALSO FACULTY MEMBERS AT THE UNIVERSITY OF TEXAS MEDICAL SCHOOL AT HOUSTON HAVE JOINED THE STAFF OF TIRR MEMORIAL HERMANN.

New Equipment Offers Patients Advanced Treatment Options

TIRR Memorial Hermann recently added two Restorative Therapies FES bikes, Bioness® hand rehabilitation and foot drop systems, the VitalStim Experia™ clinical unit and IOPI Medical's Iowa Oral Performance Instrument to its growing list of innovative rehabilitation technology.

The FES RT300 leg system allows patients to stimulate up to 10 muscle groups while cycling securely from a wheelchair. Used to stimulate the legs and trunk, the technology is available at the main hospital and at TIRR Memorial Hermann Kirby Glen's outpatient program.

The Bioness NESS L300 foot drop system uses mild electrical stimulation to lift the patient's foot for safer and easier walking. The device fits just below the knee and aids in walking on flat ground, up and down stairs and on uneven surfaces. The NESS H200 hand rehabilitation system uses the same type of mild electrical stimulation to improve arm function. A lightweight orthosis attaches to the forearm and wrist, and connects to the control unit. Internal electrodes help the hand move. Clinicians at Kirby Glen custom-fit the orthosis and program the control unit with individually designed programs.

The Experia device, available at Kirby Glen, helps dysphagia patients by providing visual and auditory biofeedback during swallowing for objective measurement of effortful swallows. It also assists with muscle relaxation training, establishes a baseline of muscle activity and sets

treatment targets. Electrical stimulation to the target muscle group is activated by the patient's effort, creating a reward-based biofeedback loop.

The Iowa Oral Performance Instrument (IOPI) objectively measures tongue strength for tongue elevation, laterally directed movements and protrusion; lip compression strength; and fatiguability of the tongue and lip. The IOPI helps clinicians at TIRR study and treat disorders affecting swallowing, speech and eating. The technology also helps document deficits that justify treatment, diagnostically differentiates between muscle weakness and motor control problems and motivates patients by showing them their progress from muscle exercise therapy.

TIRR Hotwheels Basketball Team Moves Up in NWBA Rankings

TIRR Hotwheels, the hospital's junior basketball team for adolescents age 10 to 18, went into play in this year's National Wheelchair Basketball Association's (NWBA) national tournament ranked 12th in the nation in the varsity division. They finished



the weeklong tournament ranked sixth. Team member **Malat Wei** was named to the All Tournament Second Team, and graduating senior **Alex Gonzales** was named to the Southwest Conference's All Academic Team.

Founded in 1997, the Hotwheels competed in the 1997-98 NWBA basketball season with only five players. Over the years more than 75 wheelchair athletes have participated on the team, and many have gone on to continue their education and basketball careers at the collegiate level.

TIRR adaptive sports coordinator **Genny Gomez, C.T.R.S.**, serves as head coach; 2010 is the team's 11th consecutive season.

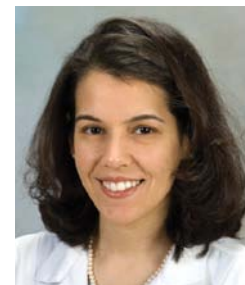
In Brief

Corwin Boake, Ph.D., has been elected to the board of directors of the American Board of Clinical Neuropsychology, which certifies clinical neuropsychologists in the United States and Canada.

Monica Verduzco-Gutierrez, M.D., has been named interim medical director of the Jones Rehabilitation Unit at Memorial Hermann-Texas Medical Center. She will continue in her role as a neurotrauma and neurorehabilitation consultant at Memorial Hermann-TMC and as an outpatient clinic physician at TIRR. ♦



Corwin Boake, Ph.D.



Monica Verduzco-Gutierrez, M.D.

TIRR Memorial Hermann has earned Quality Respiratory Care Recognition (QRCR) under a national program aimed at helping patients and families make informed decisions about the quality of respiratory care services available in hospitals.

HOSPITALS EARNING THE QRCR DESIGNATION ENSURE PATIENT SAFETY BY AGREEING TO ADHERE TO A STRICT SET OF CRITERIA GOVERNING THEIR RESPIRATORY CARE SERVICES.

About 700 hospitals – approximately 15 percent of hospitals in the United States – have applied for and received this award. The QRCR program was started by the American Association for Respiratory Care (AARC) in 2003 to help consumers identify facilities that employ respiratory therapists to provide respiratory care. Hospitals earning the QRCR designation ensure patient safety by agreeing to adhere to a strict set of criteria governing their respiratory care services.

TIRR's 12-month **Neurologic Physical Therapy Residency Program**, the first such program in the Southwest, was recently credentialed by the American Physical Therapy Association. Established in partnership with The School of Health Professions at The University of Texas Medical Branch at Galveston and Texas Woman's University, the program is one of only seven in the United States.

Lex Frieden has been awarded the Distinguished Service Award by the Henry Kendall College at the University of Tulsa. A 1971 cum laude graduate in psychology, Frieden accepted the award at the university's Arts & Sciences Honors Convocation held in April.

The award recognizes his lifelong contributions to the field of rehabilitation. Frieden defined the concept of independent living in 1975 and went on to spark the founding of more than 400 centers for independent living in the United States. In 1983, he was named one of the Ten Outstanding Young Americans.

In 1984, President Ronald Reagan appointed Frieden to serve in his administration as director of the newly created National Council on the Handicapped, now called the National Council on Disability. In 1986, Frieden and the council proposed the Americans with Disabilities Act, which passed and was signed into law in 1990.

Angelle Sander, Ph.D., recently received the David Strauss, Ph.D. Memorial Award from the Brain Injury Interdisciplinary Special Interest Group of the American Congress of Rehabilitation Medicine.

Jeffrey Berliner, D.O., is a recipient of The University of Texas Medical School at Houston Dean's Teaching Award of Excellence, presented in May.

Cindy Ivanhoe, M.D., was appointed a charter member of the American Academy of Physical Medicine and Rehabilitation's Spasticity Task Force in March.

Monique Pappadis, M.Ed., C.H.E.S., C.C.R.P., was awarded the University of Hong Kong Student Award for Outstanding

Abstract, for "Perceived Environmental Barriers of Persons with Traumatic Brain Injury," which she presented at the Joint World Conference on Social Work and Social Development, Hong Kong, June 10-14, 2010.

Laura Martin, P.T., D.P.T., and **Jessica Lambert, P.T., D.P.T.**, were awarded the Doctor of Physical Therapy degree from Texas Woman's University last December. **Jean Marie Devlin, P.T., D.P.T.**, and **Treva McKinney, P.T., D.P.T.**, were awarded doctorates from the University of Scranton, Pennsylvania, and The University of Texas Medical Branch at Galveston, respectively. They increase the number of TIRR employees who hold doctoral degrees in physical therapy to eight, all of whom work at TIRR Memorial Hermann Kirby Glen. ♦



Lex Frieden



Cindy Ivanhoe, M.D.



Monique Pappadis, M.Ed.



Angelle Sander, Ph.D.



Jeffrey Berliner, D.O.

The therapy staff was aggressive in pushing him to advance more, and over time he transitioned to a minimally conscious state. “We are aggressive with all our patients, but there was something in John that made us believe there was more there than met the eye,” says speech therapist **Michael Gettleman, M.H.A., M.A., C.C.C.-S.L.P.** “We had a strong sense when we looked in his eyes that he was in there, and that we just needed to work hard to help him get out. All of his therapists noticed it.”

Marcie Roettger, P.T., was Keller’s physical therapist for his first three-month stay at TIRR. “When John couldn’t do everything we asked of him, he’d give us a certain look that let us know that he was getting frustrated with his inability to perform the task. We could tell he was trying to respond. I give extra kudos to his entire family. Their ability to stay positive was infectious to all of us.”

Keller improved, and once he was medically stable, he was discharged for further treatment that included neurosurgery to replace a missing piece of skull with a titanium plate, placement of an intrathecal baclofen pump to manage spasticity and surgery to release his contracted Achilles tendons. He also spent time in the skilled nursing unit at University Place, Memorial Hermann’s senior living community, where he continued aggressive therapy.

“When John was readmitted to TIRR in October 2008, he’d just gotten his baclofen pump, so our initial goals were titrating the pump and aggressive exercise to improve his head and trunk control and to increase his alertness,” says **Julie Welch, P.T., N.C.S.**, his physical therapist during the second stay. “He was starting to be more consistent with visual tracking, and he was making more noise. At first the noises were

guttural, so we weren’t sure whether he meant yes or no but he was definitely trying to respond more. As time passed, his ability to respond and perform tasks increased.”

Dr. Tastard began trials of various neurostimulants to help Keller wake up. Botulinum toxin injections relieved contractions in his neck. “He made incredible progress,” she says. “His family was very positive, very loving and very caring. When he had a complication or setback, they said, ‘We know he’s going to work through this. We’re going to keep moving. This is only a small setback.’ They never viewed his injury and rehabilitation as a negative situation. They kept saying that all these things show us we have to work harder to find a solution.”

“It was a long, slow process,” Jan Keller admits. “People would ask us, ‘How long will it take?’ We’d say, ‘With God, a thousand days is like one day. We have to be patient and keep pushing.’ The miracle was that John was hearing us say these things. We pushed and prayed until something happened. He didn’t start putting things together until he started talking and that was 11 months after the accident.”

In January 2009, Keller returned home to continue his recovery with his parents. The following August, he moved back home with his wife April and sons Caden, 4, and Dalton, 2. Today, he uses his blog (www.johnkellerupdate.blogspot.com) to reach out to others who need prayer.

“John is basically back to normal,” Dr. Tastard says. “He’s able to be independent in all activities and participate with his wife and kids in their activities. That’s an enormous accomplishment for him. He’s still working to improve his memory and some visual and spatial difficulties.”

Of her son’s experience at TIRR Jan Keller says, “They are so positive

and so precious and so full of life. When we arrived, we were surprised when they asked, ‘Did you bring his workout clothes? Tomorrow he’ll be up and in therapy.’ They didn’t tell us until much later that John was one of the most severe cases of traumatic brain injury they’d seen. It’s tough to see your son day after day with staples in his head, intubated and unresponsive, but at TIRR they were never discouraged.”

Keller arrived at the rehabilitation hospital at exactly the right time in his recovery, says Roettger. “We gave him the chance to grow and emerge from a minimally conscious state, which may not have happened had he gone home or to a nursing home. Here, one of our team members would spot something positive – a new way of looking or a certain repeated movement – and we could all build on it.”

“TIRR knew what to do,” Jan Keller says. “They taught us how to look at the blood work and reports so we could track changes and improvements. They discussed everything with us. It was an incredible life-changing experience that deepened our faith.”

John’s survival alone was miraculous, says Gettleman. “We watched him progress from patient back to husband and father and son and almost everything else he was before the accident. His family’s faith never wavered. They always believed he was going to wake up and be OK. And they called it. His is one of the most remarkable stories I’ve seen in my professional career. When he came to us, he couldn’t even move his eyes and now he’s walking, talking and writing a book. These are the outcomes we dream of as healthcare professionals.” ♦

¹ A Miracle on the Road to Recovery: A True Story by John Keller with Margie Knight. Word & Spirit Resources, 2010.



ON THE PODIUM

Martin Grabois, M.D., and Gerard Francisco, M.D., were invited speakers at



Martin Grabois, M.D.

the Second Asian-Oceania Physical and Rehabilitation Medicine Conference held in Taipei, Taiwan, from April 29 to May 2, 2010. Dr. Grabois delivered the

keynote address on “Complex Regional Pain Syndrome,” and Dr. Francisco presented on “Botulinum Toxin and Intrathecal Baclofen: Concurrent or Competing Therapies?”

Pappadis, MR, Sander AM, Struchen MA. Perceived environmental barriers of persons with traumatic brain injury. Poster presentation to the Joint World Conference on Social Work and Social Development: The Agenda, Hong Kong, June 10 to 14, 2010.

Katz D, Seel, R, **Sherer M**, Whyte J. Assessment scales for disorders of consciousness: Evidence-based recommendations for clinical practice and research. Invited presentation to the International Brain Injury Association Eighth World Congress on Brain Injury, Washington D.C., March 12, 2010.

Sherer M. Agitation in patients with traumatic brain injury. Invited presentation to the meeting of the Southeast Texas Chapter of the Association of Rehabilitation Nurses, Houston, Texas, April 27, 2010.

Sherer M. Evidence-based practices for the assessment and management of confusion following brain injury. Invited presentation to the Contemporary Forums Brain Injuries Conference, San Antonio, Texas, April 29, 2010.

Sherer M, Malec JF. Addressing self-awareness with those who are brain injured: Establishing a therapeutic

alliance. Invited presentation to the Contemporary Forums Brain Injuries Conference, San Antonio, Texas, April 30, 2010.

Cindy Ivanhoe, M.D., made the following presentations: “The Upper Motor Neuron Syndrome: Coordination of Treatments,” Weill Cornell College of Medicine, New York City, February 6, 2010; “Successful Spasticity Management in Adults Using Botulinum Toxin Type A,” Melbourne, Australia, February 29, and Sydney, Australia, February 30, 2010; “Managing Hypertonia in Adults with Cerebral Palsy: How and Why,” Christchurch Convention Centre, Christchurch, New Zealand, March 3 to 6, 2010.

Presentations made at the 26th Annual Statewide Conference of the Brain Injury Association of Texas, held June 3 to 6, 2010, in Austin, Texas, included: “Compensating for Memory Problems After TBI: An Evidence-Based Approach” and “Integrating

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TIRR IN THE NEWS

Former TIRR patient **Jared Dunten** and several friends founded Will Walk, a foundation that works 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. KHOU-TV Houston, March 9, 2010.

In February 2008, **John Keller** of McAllen, Texas, suffered a severe traumatic brain injury in a motorcycle accident and was not expected to recover. After intensive therapy at TIRR, he walked out of the facility in January 2009. Keller is the author,

with Margie Knight, of *A Miracle on the Road to Recovery*. Fox News Houston, March 15, 2010.

Wendy Wilkinson, J.D., director of the ILRU’s DBTAC Southwest ADA Center, was interviewed for a broadcast news segment on a study under way at the Brown Foundation Institute of Molecular Medicine at The University of Texas Health Science Center at Houston, where scientists are testing a drug that mimics the effects of exercise. Fox News Houston, April 21, 2010.

Eighteen-year-old wheelchair athlete **Alex Gonzales**, a member of the TIRR Houston Hotwheels basketball team since 2005, was the first wheelchair athlete to be included in college signing day at Cy-Woods High School. Gonzales

will play for the Movin’ Mavs at The University of Texas at Arlington. KIAH-TV Houston, May 5, 2010.

Former TIRR patient **Dave Hartsock** was paralyzed when he saved his parachuting student by taking the brunt of the impact when their chute failed to deploy during a tandem jump. He continues his recovery at TIRR. CBS Evening News, May 10, 2010.

Danielle Melton, M.D., a physical medicine and rehabilitation specialist at TIRR, was interviewed about the physical and mental challenges amputees face, and their rehabilitation options. Fox News Houston, May 12, 2010. ♦

Sexuality into Brain Injury Rehabilitation” by **Angelle Sander, Ph.D.**; “Compensating for Problem-Solving Deficits After TBI: An Evidence-Based Approach” and “Social Networking: Increasing Opportunities for Social-

ization and Participation After TBI” by **Allison N. Clark, Ph.D.**; and “The TBI Model Systems Program: Resources for Consumers” by **Mark Sherer, Ph.D.**

Mark Sherer, Ph.D., took part in a panel discussion about minimally conscious patients at the 8th Congress of the

International Brain Injury Association, held March 10 to 14, 2010, in Washington, D.C. Poster presentations were made by **Brenda Lantz, C.T.R.S.**; **Michael Gettleman, M.H.A., M.A., C.C.C.-S.L.P.** and **Hannah Bass, C.C.C.-S.L.P.** ♦

IN PRINT

Bold print indicates that the person is affiliated with TIRR.

Pappadis MR, Sander, AM, Struchen MA, Leung P, Smith DW. Common misconceptions about traumatic brain injury (TBI). *Journal of Head Trauma Rehabilitation*. In press.

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Sherer M, Roebuck-Spencer T, Davis LC. Outcome assessment in TBI clinical trials and prognostic studies. *Journal of Head Trauma Rehabilitation* 2010;25:92-98.

Novack TA, Labbe DR, Grote M, Carlson N, **Sherer M**, Arango-Lasprilla JC, Bushnik T, Cifu D, Powell JM, Ripley D, Seel RT. Return to driving within five years of moderate-severe traumatic brain injury. *Brain Injury* 24:464-471.

Brown A, Malec J, Mandrekar J, Diehl NN, Dikmen SS, **Sherer M**, Hart T, Novack T. Predictive utility of weekly post-traumatic amnesia assessments after brain injury: A multicentre analysis. *Brain Injury* 2010;24:472-478. ♦

REHABILITATION RESEARCH AND TRAINING CENTER EDUCATIONAL PRODUCTS AVAILABLE

As part of TIRR’s Rehabilitation Research and Training Center (RRTC) grant, investigators at the Brain Injury Research Center (BIRC) have created educational materials for persons with TBI and their caregivers, and for health professionals who may treat persons with TBI in their general practice but may lack specific training in how to meet their needs. The products are available on the RRTC Web site at the links below.

For Persons with TBI and Their Caregivers

I Have a What?: A Guide for Coping with Moderate to Severe TBI:

www.tbicommunity.org/resources/publications/Moderate-to-Severe_Manual_English2.pdf

I Have a What?: A Guide for Coping With Mild TBI:

www.tbicommunity.org/resources/publications/Mild_Manual_English.pdf

Increasing Awareness of TBI and Reducing Attitudinal Barriers: A Video Series:

www.tbicommunity.org/resources/publications/T2/index.html

Picking Up the Pieces After TBI: A Guide for Family Members:

www.tbicommunity.org/resources/publications/famEducManual.pdf

For Healthcare Professionals

Systematic Approach to Social Work Practice: Working with Clients with TBI:

www.tbicommunity.org/resources/publications/SW_Manual2009.pdf

Guidebook for Psychologists Working with Persons with Traumatic Brain Injury:

www.tbicommunity.org/resources/publications/Psych_TBI_Manual_FINAL129.pdf

Assisting Patients with Traumatic Brain Injury: A Brief Guide for Primary Care Physicians (podcasts):

www.tbicommunity.org/resources/podcasts/index.htm

Traumatic Brain Injury for VR Counselors (Web-based training module):

www.tbicommunity.org/resources/publications/VR_Manual/index.html



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MESSAGE FROM THE CMO

At TIRR Memorial Hermann, we stay focused on evidence-based medicine



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

but we also challenge our rehabilitation professionals to be creative in their approaches to therapy. To us that means looking beyond achieving merely good outcomes, and striving instead for the superlative.

When John Keller was admitted to TIRR with a severe traumatic brain

injury, the odds of a nearly complete recovery were very slim. But he defied those odds and left TIRR walking and talking, thanks to the faith and unwavering support of his family, his desire to improve his life, and the creativity, vigilance and engagement of his therapists as they helped him turn small improvements into a dramatic victory. All of us who became John's friends during his long stay at TIRR had the privilege of sharing in his amazing recovery.

We also challenge our patients and former patients to reach for superlative outcomes through community programs like TIRR Hotwheels, whose

team members finished the National Wheelchair Basketball Association's season ranked sixth. Our ultimate goal for our patients is a return not only to productivity, but also to full engagement in all things that make life meaningful.

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 119 -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.