
THE INSTITUTE FOR REHABILITATION AND RESEARCH
TIRR JOURNAL
WINTER 2022
RETURNING TO FAMILY, FRIENDS AND FUN
TIRR MEMORIAL HERMANN EARNS TOP RECOGNITION BY U.S. NEWS & WORLD REPORT
TIRR MEMORIAL HERMANN
Rehabilitation & Research

FEATURES

CLINICAL CARE

RESEARCH

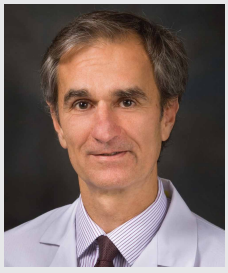
ACCOLADES

CANCER REHABILITATION SYMPOSIUM 2022

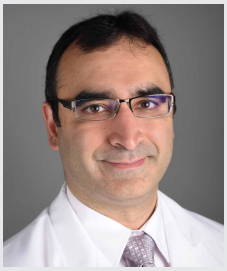
Advancing Clinical Practice
May 12-14, 2022

INVITED SPEAKERS

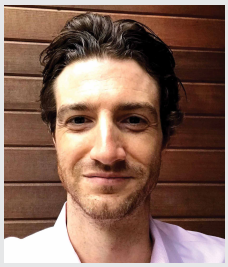
Catherine M. Alfano, PhD
Northwell Health Cancer Institute



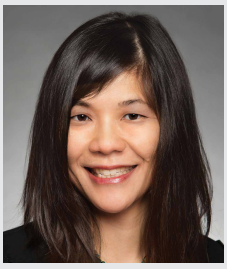
Eduardo Bruera, MD, FAAHPM
MD Anderson Cancer Center



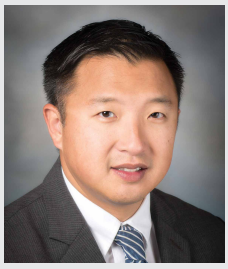
Vishwa S. Raj, MD
The Levine Cancer Institute, Carolinas Rehabilitation



Sean Smith, MD
Cancer Rehabilitation Program, University of Michigan



Anna Lisa de Joya, PT, DSc
TIRR Memorial Hermann



Jack B. Fu, MD
MD Anderson Cancer Center

Currently, there are approximately 17 million cancer survivors in the United States. This number is expected to rise to 22.2 million by the year 2030. Cancer survivors often experience complications from cancer and its various treatments that can impact function. Cancer rehabilitation has an important role in the cancer care continuum. This symposium will discuss selected cancer diagnoses and cancer treatments that impact rehabilitation and provide evidence-based assessment and treatment strategies that can be applied to clinical practice. This 3-day virtual symposium covers a variety of topics in the field of cancer rehabilitation with individual speakers, panel discussions and exhibitor breakout rooms.

Accreditation

The University of Texas MD Anderson Cancer Center is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

Credit Designation

The University of Texas MD Anderson Cancer Center designates this internet live activity for a maximum of 20.50 *AMA PRA Category 1 Credits™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Continuing Education

Target Audiences include Physicians, Occupational Therapists (OT), Occupational Therapy Assistants (OTA), Physical Therapists (PT), Physical Therapy Assistants (PTA), Speech Language Pathologists (SLP), Case Managers (CCMC), Nursing professionals and all other healthcare providers.

Consistent with TIRR Memorial Hermann's commitment to provide high-quality, evidence- based, educational programming to all members of the local, national and international community, education credits will be applied for through the following organizations: Texas Physical Therapy Association, Texas Occupational Therapy Association, American Speech and Hearing Association, The Commission for Case Manager Certification.

Memorial Hermann Health System is accredited with distinction as a provider of nursing continuing professional development by the American Nurses Credentialing Center's Commission on Accreditation.

REGISTRATION

To learn more or enroll in one or more of these courses, please visit **memorialhermann.org/tirreducation**

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THE UNIVERSITY OF TEXAS
MD Anderson Cancer Center
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TIRR MEMORIAL HERMANN
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SAVE THE DATE | JANUARY 2023

International Stroke Rehabilitation and Recovery Conference

Hybrid: In-person and virtual

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Gerard E. Francisco, MD
McGovern Medical School at UTHealth Houston, TIRR Memorial Hermann

Sheng Li, MD, PhD
McGovern Medical School at UTHealth Houston, TIRR Memorial Hermann

Sean I. Savitz, MD
UTHealth Houston Institute for Stroke and Cerebrovascular Diseases

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The Institute for Stroke and Cerebrovascular Diseases

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DoC 2021
Virtual Courses On-Demand

TIRR Memorial Hermann's Disorders of Consciousness (DoC) 2021 Conference hosted nearly 500 attendees from 39 states and 11 countries. This robust conference included discussions on conceptualization/classification of consciousness, modes of assessment and diagnosis, therapeutic interventions, the family perspective, ethics and advocacy.

We created virtual courses from the content of the conference and are thrilled to offer this education to interested professionals.

To learn more or enroll in one or more of these courses, please visit **memorialhermann.org/tirreducation**

Thank you for your dedication to helping those with Disorders of Consciousness.

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Major Hudlin Returns to Family, Friends and Fun

Major Hudlin is a vibrant, active 7-year-old boy who loves to make TikTok videos and play outdoors with his siblings. He also has sickle cell disease, a group of inherited red blood cell disorders that results in a shortage of red blood cells and can cause pain, infection, acute chest syndrome and stroke.

When his grandmother picked him up from daycare and saw that he was unable to lift his right arm or move the fingers of his right hand, she drove him to the emergency department of the local hospital in Wharton, Texas. On arrival, the emergency team arranged a transfer by air ambulance to the Level 1 Pediatric Trauma Center at Children's Memorial Hermann Hospital in the Texas Medical Center. Major's mother, Kenisha Aldridge, drove the hour and a half to Houston to meet him. Emergency physicians at the trauma center diagnosed Major with stroke. After a week in intensive care, he was transferred to TIRR Memorial Hermann's new pediatric outpatient unit to begin rehabilitation.

"Major came to us with significant right-sided hemiparesis, and I expected him to be at TIRR Memorial Hermann for 3 or 4 weeks, but he quickly exceeded my expectations," says affiliated physician **Stacey Hall, DO**, a pediatric physiatrist who provides comprehensive care for pediatric patients with physical disabilities, cerebral palsy, spasticity, dystonia, arthrogryposis and myelomeningocele. Dr. Hall is a clinical assistant professor of pediatric rehabilitation medicine at McGovern Medical School at UTHealth Houston.

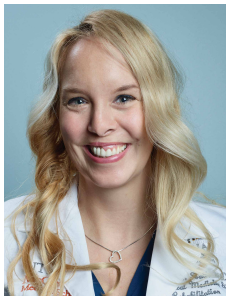
Major's therapy team worked to help him regain the use of his hand and arm, as well as his balance, lower extremity strength and endurance. "We played games within a story Major created for us," says his physical therapist **Amelie Bordelon, PT**. "We climbed to the top of stairwell 'mountains' and drove scooter board 'race cars' through obstacle courses. He was such a hard worker, and his quick recovery is a testament to that."

His speech and swallowing were also affected by the stroke. "Major was admitted to TIRR Memorial Hermann on a modified diet and supplemental intake via a nasogastric tube," says **Sabrina Casso Filoteo, CCC-SLP**. "With hard work and active engagement during our sessions, he advanced to a regular diet and his NG tube was removed. Major also faced challenges with his verbal communication, so we implemented melodic intonation, pacing strategies and syllable segmentation that allowed him to gain better control of his speech patterns. Our favorite book was *If You Give a Pig a Pancake*. We created our own similar story about Major's stay at TIRR Memorial Hermann. He loved it! Rapport between the clinician and patient is vital for maximal benefits from treatment."

Major was discharged after 2 weeks of inpatient care. "He was walking community distances by himself, navigating stairs and using his right hand readily," Dr. Hall says. "His progress was truly amazing."

"Major loved every one of his care givers at TIRR Memorial Hermann," his mother says. "He still talks about them! His strength improved, and he's back at school and back to playing with his siblings and making TikTok videos." ■

A Fresh Start for L.J. After Selective Dorsal Rhizotomy



Stacey Hall, DO

Manish N. Shah, MD, FAANS

Cerebral palsy (CP) is the most common cause of motor disability in childhood, according to the U.S. Centers for Disease Control and Prevention, with symptoms ranging from a mild gait abnormality to severe total body involvement. Regardless of the level of disability, the natural history of untreated CP may be marked by progressive deterioration.

"Children are quite variably affected, but even mild untreated CP leads to painful contraction of the muscles. Prolonged muscle contraction causes spasticity. Every time the child has a growth spurt, it produces hip, knee and ankle pain," says Memorial Hermann affiliated Manish N. Shah, MD, FAANS, associate professor in the Division of Pediatric Neurosurgery at McGovern Medical School at UTHealth Houston and director of the Texas Comprehensive Spasticity Center at UTHealth Neurosciences. "L.J. Borchardt came to us as a minimally affected 14-year-old who could walk on his own, but he had pain and some activity limitations. He met all the criteria for success in selective dorsal rhizotomy (SDR): the spasticity was limited to his legs, he had good trunk control and no previous orthopedic procedures, he could tolerate physical and occupational therapy, and he had strong family support."

The neurosurgical procedure selectively sections problematic nerve roots in the spinal cord. In carefully selected patients, SDR provides an immediate permanent reduction in spasticity and offers children who follow a program of intensive postoperative therapy the potential to walk independently.

"L.J. has always been very high functioning, but his right knee was starting to turn in, causing some pain," says his mother, Kristi Borchardt. "The more research we did, the more we understood that the taller he grew, the more the spasticity would keep him from turning his knee out. The twisting would continue, and later in life he would have more pain and would likely need assistance with mobility."

The Borchardts came to Dr. Shah through Dallas neurologist Janice Brunstrom-Hernandez, MD, an outspoken advocate for people with CP who lives with CP herself and faces many of the same challenges her patients face. It was Dr. Jan, as her patients call her, who suggested SDR surgery for L.J.

"After our initial meeting with Dr. Jan, we began our research," Borchardt says. "When you hear about SDR and learn what the surgery involves, you realize that it's a huge life decision. L.J. was headed toward adulthood with pain and mobility issues. We read about other patients with CP who had the surgery, and they all said they wish they had done it earlier. Dr. Shah connected us with a mom, dad and daughter who were willing to talk with us about their experience. Their daughter was the same age as L.J., with a similar level of CP. She told us that the surgery had changed her life and that it would change ours as well. Having that conversation made a huge difference for us as a family."

Patients who undergo SDR must commit to intensive therapy for a year following the surgery. "Typically children with spasticity become weak. Most are already in physical and occupational therapy for cerebral palsy," says Dr. Shah, who holds the William J. Devane Distinguished Professorship at UTHealth and is director of pediatric spasticity and epilepsy surgery at Children's Memorial Hermann Hospital. "L.J. was using his spasticity and stiff muscles and joints to walk. If we took the spasticity away, he would have to relearn how to walk using a normal gait pattern. With SDR, we've been able to reduce drastically the work our patients have to do in therapy. We use a single incision at one to one-and-a-half levels of the spine and cut 75 to 80 percent of the nerve rootlets. Most neurosurgeons use longer incisions and cut only about 30 percent of the rootlets. Evidence shows that this 30-percent approach often fails in the long term, with a return of the spasticity. It's a one-shot procedure with no room for revision if it fails."

The Decision to Wait a Year

The surgery was originally scheduled for 2020, but at age 14, L.J. was not ready to make the commitment to postoperative therapy. He had been in therapy for 4 years when he was younger and more recently was working out at a gym with a professional trainer.

"There's a huge difference between the response of a teenager and a much younger child," says Jason Borchardt, L.J.'s father. "A 7-year-old might participate in therapy willingly because you asked, but a teenager has to decide for himself to make the commitment. We had many conversations about the potential outcome and how much of a life-changing experience it could be for L.J. By the time he was 15, his mind was made up and he was ready."

Dr. Shah took L.J. to the operating room at Children's Memorial Hermann Hospital in February 2021. After a 3-day stay at the hospital, he was transferred to TIRR Memorial Hermann's pediatric inpatient unit.

"Thanks to the expertise of the TIRR team, children who undergo SDR surgery are walking sooner and less painfully," says Dr. Shah, the leading neurosurgeon in the area for SDR. "We have high hopes for these kids. If we can treat them at the appropriate time, we can reduce the societal burden of CP enormously. They can become independent, have careers and families and enjoy a huge improvement in quality of life."

Three Weeks at TIRR Memorial Hermann

L.J. was admitted to the new pediatric inpatient unit at TIRR Memorial Hermann on February 11, 2021, under the care of affiliated pediatric physiatrist Stacey Hall, DO, assistant professor in the Department of Physical Medicine and Rehabilitation at McGovern Medical School at UTHealth Houston. "TIRR Memorial Hermann exceeded all of my expectations, which already were very high," Jason Borchardt says. "The detail they put into his care was amazing. He

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"L.J. has always been very high functioning, but his right knee was starting to turn in, causing some pain. The more research we did, the more we understood that the taller he grew, the more the spasticity would keep him from turning his knee out. The twisting would continue, and later in life he would have more pain and would likely need assistance with mobility."

Stacey Hall

MESSAGE FROM THE CHIEF MEDICAL OFFICER

This year we are celebrating our position as the best rehabilitation facility in the southern half of the United States and No. 2 in the nation in the 2021 *U.S. News & World Report* rankings. The magazine is now evaluating rehabilitation hospitals on new measures that provide more data-driven rankings than the methodology used in the past. They incorporate objective measures of patient outcomes and other aspects of quality to complement an institution's reputation based on the opinions of experts around the country, which *U.S. News* measures in an annual survey.

The rankings were created for patients who need a hospital that excels in treating complex, high-risk cases, and the changes provide consumers with more information about quality of care in inpatient rehabilitation facilities across the United States, based on volumes of patients treated who have suffered stroke, traumatic brain injury and traumatic spinal cord injury. They use data from the American Hospital Association annual survey database, the Centers for Medicare and Medicaid Services Inpatient Rehabilitation Facility Compare reporting program and the Model Systems in Rehabilitation program supported by the National Institute on Disability, Independent Living and Rehabilitation Research, in addition to the *U.S. News* expert opinion physician survey.

With this recognition, we're also celebrating our 62-year history and longstanding reputation as one of the finest rehabilitation hospitals in the nation. Every recognition we gain is a challenge to our physicians and staff to reach even higher and do more to improve the outcomes of our patients, including our post-COVID-19 patients. We are honored to be recognized for an achievement made possible by our terrific team of therapists, nurses, physicians and other clinicians and employees who stay focused on the same goal: returning each of our patients to meaningful and productive lives in the community.

Gerard E. Francisco, MD
Professor and Wulfe Family Chair in Physical Medicine and Rehabilitation Department of Physical Medicine and Rehabilitation McGovern Medical School at UTHealth Houston Chief Medical Officer, TIRR Memorial Hermann

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did physical therapy, occupational therapy, recreational therapy and music therapy. They did a fabulous job of finding out what his interests are and using them to design a rehab program especially for him."

Dr. Hall says SDR patients follow a standard protocol, which the therapy team personalizes to their interests. "L.J. loved being outdoors and had a passion for archery and bow hunting," she says. "We created a program that would make his rehabilitation meaningful and more fun. For instance, we worked on his posture while he held a bow and arrow. He used our Nerf™ gun to practice shooting at different targets. During his 3-week stay, he advanced from shooting from a wheelchair to target practice in a standing position."

The Borchardts were impressed with their son's rehabilitation program. "In music therapy, they worked on his posture while he was playing the guitar," he says. "Recreation and music therapy added so much to their incredible physical and occupational therapy programs. The Child Life specialist at TIRR Memorial Hermann provided emotional support and made sure the kids were involved and happy. She bounced in and out of his therapy sessions. One time he was doing lunges, and she was doing them with him. That kind of interaction makes a huge difference. The whole team is top-notch. You can tell they really care about their patients. As happy as we were to be going home, it was hard to leave and very emotional because of the relationships we formed and how far he came in such a short period of time. You can't help but love people like that."

Dr. Hall also commends the TIRR Memorial Hermann team. "We all have the same priority of taking care of our patients and their families and making them part of our care team," she says. "After admission, we do an initial family and patient meeting and discuss goals and expectations of care, and goals for discharge, so that we're all on the same team working toward the same goals."

The pediatric inpatient team provides the framework for rehabilitation, but it's the patients who do the work. "L.J. is a remarkable young man. He's a hard worker with an exceptional spirit. He's smart and dedicated, and he gave 100 percent every single day," Dr. Hall says. "He's our dream patient. He did an amazing job."

L.J.'s current goals are to walk unassisted and join the TIRR Peer Program. The Peers provide encouragement to individuals who have been hospitalized recently and share similar life circumstances or challenges. They provide support and encouragement, help with skills training and share information about resources.

"Dr. Shah and his staff were outstanding as well," Jason Borchardt says. "All the way around, it's been a great experience, and I recommend it to any parent with a child with cerebral palsy."

Dr. Shah says TIRR Memorial Hermann is a good match for the care provided at the Texas Comprehensive Spasticity Center. "Each child with cerebral palsy has different needs. We have many, many happy families, thanks to the outstanding care of our highly trained teams. Now we have the new pediatric inpatient unit at TIRR Memorial Hermann, which is a big coup for the children of our region." ■

From Clinical Intern to CEO: Rhonda Abbott's First 20 Years at TIRR Memorial Hermann

TIRR Memorial Hermann has long been recognized internationally for its leadership in rehabilitation and research. Today, the hospital and its comprehensive network of inpatient and outpatient rehabilitation care is led by **Rhonda Abbott, PT, FTPTA, MBA**, who started her career 20 years ago as an intern in the hospital's former Inpatient Pediatric Program.

"As with most of us who choose clinical roles in healthcare, I was drawn to help people, to provide meaningful patient care and make a difference in people's lives," says Abbott, who was promoted to senior vice president and CEO in December 2020. "Storybook romances are about love at first sight, and that is what I felt for TIRR Memorial Hermann during my clinical physical therapy internship. Working with these kiddos changed me as a person and made me realize that TIRR Memorial Hermann is where I need to be. The experience opened my eyes to the incredible wealth of skill and knowledge, clinical expertise and compassion we have here. My career journey after that was a wonderful series of fortunate events."

Since 2001, Abbott has held integral roles at TIRR Memorial Hermann. After completing her internship, she joined the Spinal Cord Injury and Specialty Rehabilitation Program as a staff therapist, where she taught and mentored in addition to providing direct patient care. She earned successive promotions to director of therapy services and director of clinical programs, vice president of operations and chief operating officer. During healthcare's frontline response to the COVID-19 pandemic, she moved into the interim CEO role and 3 months later was promoted to senior vice president and chief executive officer.

Abbott received her bachelor's degree in biomedical science from Texas A&M University, master's degree in physical therapy from Texas Woman's University and MBA from West Texas A&M University. "I chose Texas Woman's because I wanted a fantastic academic experience on a timeline that met my aggressive desire to start working sooner rather than later. My soon-to-be husband was from the Houston area, and with TWU's physical therapy school rankings and location in the world's largest medical

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>
> Rhonda Abbott

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"We are the flagship hospital for seven inpatient rehabilitation facilities, seven outpatient locations, a community wellness program, an education academy and a research arm, which gives us the capability to positively influence the long-term recovery of even more people and play a greater role in advocacy for people with disabilities."

Rhonda Abbott

center, it was the logical choice. That early exposure to Texas Medical Center institutions is a significant reason I'm able to do what I do today."

Currently, Abbott oversees TIRR Memorial Hermann's continued excellence in rehabilitative care, research, advocacy and education across the Memorial Hermann Health System. She has led clinical care redesign initiatives, translational research efforts, quality and efficiency improvement projects, and the expansion of therapy education programs. In the strategic planning arena, she led TIRR Memorial Hermann's expansion and clinical practice leveling across the System, helping to secure CARF accreditation at three Memorial Hermann Rehabilitation Network locations and providing therapy direction both at TIRR Memorial Hermann and the Memorial Hermann Rehabilitation Network, as well as expansion of the rehabilitation education program. As a long-time provider of exceptional patient care experiences, she helps ground the system as a leader in medical rehabilitation and research.

"I've always believed people can lead from anywhere, regardless of the position they hold," she says. "When you're responsible for a caseload of patients, you can make a difference in the lives of those patients. In my new role, I apply that same idea to make a meaningful impact on a much larger scale, bringing hope for a brighter future to even more patients."

As CEO, Abbott is responsible for

the hospital's vision and strategy. "The vision is the most exciting part," she says. "We are the flagship hospital for seven inpatient rehabilitation facilities, seven outpatient locations, a community wellness program, an education academy and a research arm, which gives us the capability to positively influence the long-term recovery of even more people and play a greater role in advocacy for people with disabilities."

She considers herself fortunate to lead a teaching hospital that provides experiences ranging from student laboratory learning to clinical internships for university students, to residency and fellowship programs, to supporting academic physicians from McGovern Medical School at UTHealth Houston and Baylor College of Medicine. "We expect our clinical teams to be open to learning and thirsty to soak up new knowledge," she says. "We don't expect them to know everything, but we do expect them to hold a commitment to lifelong learning. When we hire, we look for curiosity and an attitude of questioning about how we can be better tomorrow than we were today. It's not just about patient care; it's a much broader picture. We're looking for people who are empowered to define solutions and flexible enough to respond positively to the changing rules and demands of a fast-paced healthcare environment while advocating for inclusion of people with disabilities in every aspect of society."

Abbott and her husband, Blake, met as undergraduates at Texas A&M University and have been married for 22 years. She grew up in a family who loved the water and loved to travel, so she lists these among her favorite things. "I enjoy listening to the ocean waves, sitting on a swing and reading a good book. Or laying in a hammock by the lake, next to a campfire and still reading that good book! I especially enjoy international travel and experiencing new cultures, new food and new people," she says. "I like to celebrate my family and our memories and adventures in photo books and video compilations. Seeing us together enjoying life makes me smile. Our two teenage sons, Jarob and Leithan, are a significant source of joy and laughter, so heading to the movies with them is always a pleasure."

She counts her clinical internship at TIRR Memorial Hermann as the first highlight of her career. "The second highlight is, undeniably, now. I never dreamed about being where I am today, with a fantastic and amazing work family, with the opportunity of a lifetime to support this incredible organization as CEO. I am grateful, honored and humbled to do the work I do and for the support I've received and continue to receive from others who made this possible, including including TIRR's founders and transformational leaders. We've raised the bar for rehabilitation and are continuing to build on their legacy."

Asked what advice she has for young people embarking on a career, Abbott says, "Be open and be a giver. Being open applies to new experiences, new knowledge and new people. Be open to what you might learn or what you might gain. When we turn away from something, we've lost an opportunity that may never present itself again, whether it's to meet someone or help someone or be helped yourself. Staying open and giving of yourself to others is the secret to success." ■

"We've raised the bar for rehabilitation and are continuing to build on their legacy."

Rhonda Abbott

From Acute Care Rehabilitation to Competitive Sports: TIRR Memorial Hermann's Pediatric Program Includes a Full Range of Services

"We partner with parents and caregivers in a family-friendly environment to ensure the best outcomes possible while maximizing quality of life and facilitating return to their families, schools and communities. Our pediatric team is specially trained to meet the unique needs of our young patients and their families."

Teresa Cramer

TIRR Memorial Hermann's new eight-bed pediatric unit offers children age 6 months to 18 years the same quality of nationally ranked, customized care the hospital offers adults who have suffered a severe injury or illness and would benefit from inpatient rehabilitation. As with TIRR Memorial Hermann's longstanding outpatient pediatric programs, therapists use the latest technology and remain child-focused to ensure that kids are comfortable while they progress through their therapy sessions. The new inpatient unit is locked, with a private, fully equipped, child-friendly therapy gym and an outdoor sports court to meet the needs of young patients.

"Because our pediatric rehabilitation team manages patients under 18 with all diagnoses, we have to be well-versed in the treatment of a variety of disorders, ranging from brain and spinal cord injury to spina bifida to developmental delay," says **Teresa Cramer, PT, DPT**, board-certified clinical specialist in pediatric physical therapy and pediatric clinical coordinator at TIRR Memorial Hermann and the Memorial Hermann Rehabilitation Network. "We partner with parents and caregivers in a family-friendly environment to ensure the best outcomes possible while maximizing quality of life and facilitating return to their families, schools and communities. Our pediatric team is specially trained to meet the unique needs of our young patients and their families. We also utilize important safety measures to prevent the spread of COVID-19."

TIRR Memorial Hermann closed its original inpatient pediatric unit in the early 2000s but continued to offer outpatient pediatric rehabilitation. "As we've opened our satellite

locations around the city, we have included outpatient pediatric rehabilitation at each facility," says Cramer, Memorial Hermann Rehabilitation Network pediatric program manager, who leads a core group that ensures standardization of best practices across all locations.

The move of Shriners Hospital for Children to Galveston left a need in Houston for inpatient pediatric rehabilitation care. Fellowship-trained affiliated pediatric rehabilitation specialist **Stacey Hall, DO**, an assistant professor of physical medicine and rehabilitation at McGovern Medical School at UTHealth Houston, is medical director of the new unit.

"We provide really intensive rehabilitation for our pediatric patients–3 to 5 hours of therapy daily during the week," Dr. Hall says. "Therapy continues on the weekend, while also allowing break time for the patient and family. Intensive rehabilitation gives our kids a faster trajectory of recovery and improves overall outcomes, specifically in the brain injury population."

Pediatric rehabilitation services are available for patients with traumatic and non-traumatic brain injury, spasticity, post-tumor brain and spine management needs, limb loss, traumatic spinal cord injury, stroke, encephalitis or infectious encephalitis, technology-dependent tracheostomy needs, polytrauma, spine surgery, selective dorsal rhizotomy and spina

The Challenge Program and Returning to School

Living with a brain injury requires learning new skills. The Challenge Program at TIRR Memorial Hermann provides a comprehensive range of services to help brain injury and stroke survivors maximize their potential, celebrating milestones and successes through each step of recovery. Specialized services focus on community integration skills critical for the transition to independent living, school, work or volunteer activities following brain injury. The outpatient day treatment approach addresses physical abilities, memory strategies, interpersonal communication and problem-solving skills needed for long-term success.

"People in the program build strength, learn new skills and gain the confidence they need to continue daily activities despite the effects of brain injury," says **Julie Welch, PT, MS**, director of rehabilitation. "We accept age 16 and above, but we can provide services for those younger than 16 on a case-by-case basis."

The Challenge Program collects data on client progress from admission to discharge and beyond. "Our outcome studies show that, on average, 93 percent of those who complete the treatment program met their independence and personal safety goals, decreasing their need for supervision at home and in the community," Welch says. "One hundred percent of adolescent clients who completed their treatment program met their independence and personal safety goals. Eighty percent of adolescents who completed the program returned to school."

Children with serious illnesses or injuries often require extended absences from school, which can negatively affect schoolwork and emotional adjustment. For many of these children, going back to school is a tough physical and emotional challenge. The Return-to-School Program at TIRR Memorial Hermann is open to kids of any school age, beginning with kindergarten, and is focused on building strength, increasing independence and regaining skills and confidence after serious illness or injury. The program is tailored to the child and family, with emphasis on interacting with peers, learning and remembering new information, negotiating the school environment, organizing school assignments, paying attention, physical fatigue, reading and writing, and social and emotional adjustment. Team members work with schools to provide assistance in determining the accommodations and assistance necessary for a smooth transition to the classroom.

To make a referral or schedule an appointment, call 800.44.REHAB (800.447.3422).

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bifida. In addition to the full range of pediatric therapy care, TIRR Memorial Hermann team members work with other affiliated specialists when needed, including neurosurgeons, orthopedic surgeons, pediatricians, oncologists, neurologists and many others.

"We're using patient and clinical feedback to make changes daily to create a better experience for our pediatric patients and their families," says **Rhonda Abbott, PT, FTPTA, MBA**, senior vice president and CEO of TIRR Memorial Hermann and the Memorial Hermann Rehabilitation Network. "We've been returning patients to the community for more than 60 years. To apply the principles of rehabilitation again with refreshed lenses for the pediatric population has been exciting for our team and the community. I'm very passionate about serving pediatric patients, especially children with the most complex care needs. We now offer children the full range of rehab- ilitation, from acute care through inpatient rehabilitation, to outpatient to wellness and prevention programs, as well as competitive sports and recreational activities for kids."

Following their inpatient stay at TIRR Memorial Hermann, pediatric patients can transition to the Memorial Hermann Rehabilitation Network's outpatient program at four locations around Houston. Former inpatients can also follow up with a pediatric physiatrist at the TIRR Memorial Hermann Outpatient Medical Clinic. ■

Outpatient Care for Kids

Dr. Stacey Hall and newly recruited affiliated pediatric physiatrist **Simra Javaid, DO**, who joined the TIRR Memorial Hermann medical staff and the faculty at McGovern Medical School at UTHealth Houston in September, see pediatric patients 3 days a week at TIRR Memorial Hermann. The physician-based clinic meets the needs of adult and pediatric patients who require initial or continuing rehabilitation care with a physician, with services provided through a number of specialty clinics and programs staffed by a multidisciplinary team of healthcare professionals. The clinic is also open to people who are not former TIRR Memorial Hermann patients.

"Common pediatric outpatient referrals are for the management of cerebral palsy and spina bifida," Dr. Hall says. "We also see kids with brain injury, spinal cord injury, muscular dystrophy, cancer, muscle and nerve disorders, and those who walk on their tiptoes as a result of cerebral palsy or neuropathy."

To schedule an appointment, call 713.797.5926.

Healthy Competition Through the Adapted Sports and Recreation Program

"Our mission is to provide and support meaningful opportunities for people living with physical disabilities and chronic health conditions to participate fully in their community in accessible sports, recreation, and fitness and wellness activities," says **Peggy Turner, CTRS**, adapted sports and recreation program coordinator and athletic community liaison at TIRR Memorial Hermann. "We have programs for kids from high school age on down. Some of our program participants miss school due to surgeries, so we don't have an upper-age limit for participation. Our core value is to support independence and inclusion and to help kids of all ages re-enter the community successfully. By staying fit, they reduce their risk of readmission to a healthcare facility."

Studies have shown that children and adolescents who are active and social are more likely to do well in school and go to college. "We're connected with 14 or 15 universities that sponsor wheelchair basketball teams for both girls and boys," Turner says. "One of our kids, Kaitlyn Eaton, was selected for the U.S. Paralympic Women's Wheelchair Basketball Team and went to Tokyo for the Paralympic Games. All of these successes show what a person can accomplish if given the opportunity. Kids are so resilient, and we like to help them maximize their potential."

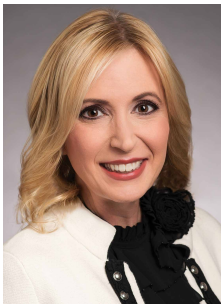
Turner fosters relationships with service providers, individuals and adapted sports partners, including the City of Houston's Adapted Sports and Recreation Center on West Gray and the City of Pasadena's Adapted and Inclusive Recreation Program. "I help patients transition from the hospital to the community, visiting inpatients and outpatients at TIRR Memorial Hermann facilities to make them aware of what's possible after discharge," she says.

TIRR Memorial Hermann Adapted Sports and Recreation offers youth and adults with physical disabilities an outlet to continue playing sports both competitively and recreationally through wheelchair basketball, wheelchair rugby, handcycling, wheelchair softball, wheelchair racing, seated throw/field events, powerlifting, recumbent cycling, fitness programs, tennis and more.

"If we don't have a program at TIRR Memorial Hermann, we help kids find one that allows them to accomplish whatever they want to do," Turner says. "At our Adapted Sports and Recreation Day we introduce them to adapted archery, table tennis, fencing and para-powerlifting for all age groups. If they like archery, for instance, we connect them to two or three different granting agencies to help them get access to equipment."

For more information or to participate, call 832.567.4832.

Patients with Post-polio Syndrome Were First to Receive COVID-19 Vaccines at TIRR Memorial Hermann



Nicole Harrison, MBA, BSN, RN, NEA-BC

TIRR Memorial Hermann's roots go back to the 1950s, when the polio epidemic was at its height in the United States. Founded as one of the first polio treatment centers in the nation, TIRR Memorial Hermann transitioned with the discovery of a polio vaccine to apply its rehabilitation expertise to catastrophically injured patients.

Fast-forward more than 60 years to the COVID-19 pandemic, when physicians and staff at TIRR Memorial Hermann were quick to ensure that those who survived polio would be among the first to receive the new vaccine.

"As soon as we knew the vaccines would be available, we had discussions among the management team about how to provide them," says **Nicole Harrison, MBA, BSN, RN, NEA-BC**, vice president and chief nursing officer at TIRR Memorial Hermann, Memorial Hermann Rehabilitation Hospital-Katy and the Memorial Hermann Rehabilitation Network. "Our patients with post-polio syndrome were the first who came to mind. Many of them contracted polio before a vaccine was available, and we wanted to make sure they didn't miss out again."

Rhonda Young got a call from a TIRR Memorial Hermann staff member on her 69th birthday in January 2021, asking if she would like a COVID-19 vaccine. "I said, 'Yes!' and we scheduled my vaccine for the afternoon of January 8. I was so surprised that they called. It was like happy birthday to me!" she says.

Young was the first person to receive a COVID-19 vaccine at the hospital. Like most patients with post-polio syndrome treated at TIRR Memorial Hermann, she contracted the disease before the polio vaccine became available in 1955. "I was a toddler, between 18 and 22 months old," she says. "I don't remember very much of the experience except that I was put on a polio ward, and my parents weren't allowed to visit. I was in the hospital for about 60 days and then had to relearn how to walk. There are a couple of photos of me on the table and my mom doing physical therapy with me."

Polio left Young with a shorter left leg. "I had two surgeries to stimulate its growth—they were trying to catch my growth spurt after first grade and then again after second grade," she recalls. "They were successful, and today I have only a quarter-inch difference in the length of my legs and scars around the knee on both sides. After those two surgeries, I thought I was done with the polio stuff."

But many post-polio patients have developed chronic medical conditions that may include respiratory problems. "We were so fortunate to have had an opportunity to give these patients something they missed back in the 1950s—a vaccine delivered early

enough to protect them," says **Gerard Francisco, MD**, affiliated professor and chair of the Department of Physical Medicine and Rehabilitation and Wulfe Family Chair of Physical Medicine and Rehabilitation at McGovern Medical School at UTHealth Houston. Dr. Francisco is chief medical officer at TIRR Memorial Hermann and director of the NeuroRecovery Research Center on the hospital's campus.

Young was diagnosed with post-polio syndrome in 2008 by affiliated physician Carlos Vallbona, MD. Dr. Vallbona emigrated from Spain to the U.S. in the 1950s during the raging polio epidemic and joined the medical staff at TIRR Memorial Hermann and the faculty of Baylor College of Medicine.

"Dr. Vallbona looked at me from head to toe and noticed the differences between the two sides," she says. "He said, 'I suspect more than your left leg was affected.' I didn't have respiratory problems, but I was tired and found I couldn't do the things I normally did. A lot of things made sense after he diagnosed me."

Young returns to TIRR Memorial Hermann's Post-polio Clinic annually for a checkup. "We pride ourselves on our post-polio program, which is one of only a few in the country," Harrison says. "After we set up our COVID-19 vaccine clinic here, we vaccinated many other patients with spinal cord injury, brain injury or limb loss, all of whom met the criteria to be among the first vaccinated. We finished most of our patients in March 2021 and then opened up vaccines at the clinic to caregivers of patients, employees and after that, the community." ■

Rhonda Young receiving the COVID-19 vaccine.

Rehabilitation Hospitalists Play a Key Role in Improving Outcomes for Complex Patients

Affiliated physicians, Dr. Argy Stampas, MD, MS from physical medicine and rehabilitation meeting with hospitalist, Dr. Gina Khraish, MD.

TIRR Memorial Hermann's affiliated pediatric and adult hospitalist teams have allowed the rehabilitation hospital to respond to the medical issues of its high-acuity patient population quickly to keep them on track with their therapy.

"The complexity of all patients across the board has increased over the years, and with the trend toward reducing length of stay, improving outcomes and at the same time reducing costs, patients are moving through the pipeline of different levels of care much faster now," says affiliated physician **Jacob Joseph, MD**, clinical chief of neuromuscular rehabilitation, vice chair for clinical operations in the Department of Physical Medicine and Rehabilitation at McGovern Medical School at UTHealth Houston, and director of medical affairs and services for the Memorial Hermann Rehabilitation Network. "We also recognize that there are limitations in our physical medicine and rehabilitation training. Hospitalists have the clinical experience to care for complex patients with multiple comorbidities and the skills to lead medical quality improvement efforts. Having these additional resources has allowed us to stay ahead of our increasing acuity."

Another affiliated physician, **Autumn Atkinson, MD**, is an assistant professor of pediatrics at McGovern Medical School at UTHealth Houston and lead hospitalist for the pediatric group at TIRR Memorial Hermann. She works closely with pediatric physiatrist Stacey Hall, DO, an attending physician on the new pediatric inpatient unit.

"It's crucial to have a pediatric hospitalist on the floor ready to help with medical management in the event of an emergency," Dr. Atkinson says. "On any given day we might deal with autonomic dysreflexia, complications of traumatic brain injury like hydrocephalus, or electrolyte disturbances. We manage kids with congenital disorders as well, such as cerebral palsy and the full range of autoimmune and genetic disorders. It's advantageous to have a pediatric hospitalist on board."

Hospitalists and physiatrists come together to treat patients using a co-management model. "We round together on all patients, and in the afternoon we have team meetings, making sure the family is an integral part of the team," Dr. Atkinson says. "We schedule 3 to 5 hours of schooling a week to keep kids engaged in their schoolwork. As we get closer to discharge, we go over nitty-gritty

details with schools, like recommendations for accommodations for better learning or special equipment needs. We're a team of equals in co-management. We've learned that constant checking is so important to make sure we're united as a physician team, and also that families know that their child is being cared for by two doctors who work closely together."

Andreea Xavier, MD, an affiliated associate professor in the Department of Emergency Medicine and Wyatt Ranches Distinguished Professor in Geriatric and Palliative Medicine at McGovern Medical School at UTHealth Houston, is division director of acute care medicine and serves as medical director of the adult hospitalists at TIRR Memorial Hermann. "Employing hospitalists in rehabilitation hospitals is a developing field," Dr. Xavier says. "We've had incredible success with our co-management models. By establishing very clear roles and responses and keeping open channels of communication, we have a significant impact on reducing transfers to acute care and improving outcomes. With eight adult hospitalists who rotate at TIRR Memorial Hermann regularly, 7 days off and 7 days on, we are available to meet with family members, follow up on tests, answer nurses' questions and deal with problems that may arise."

In the evenings, patients are cared for by a rotation of two advanced practice providers—either nurse practitioners or physician assistants—who are in-house and can provide assistance with inpatients and consultations for patients being admitted. "One of our advanced practice providers arrives at 1 p.m., and the other is responsible for the night shift," Dr. Xavier says. "They are responsible for new admissions, rapid responses, codes, and evaluating and managing unstable patients during the night and have developed a great collaboration with TIRR Memorial Hermann's nursing staff. Together, they've done a great job with our goal of improving mortality and morbidity and patient outcomes." ■

TIRR Memorial Hermann Earns Top Recognition by *U.S. News & World Report*

TIRR Memorial Hermann Hospital ranked No. 2 among the country's top rehabilitation hospitals in the *U.S. News & World Report's* Best Hospital rankings for 2021-2022. TIRR Memorial Hermann was previously ranked No. 3 in the 2020-2021 rankings and has been included in the prestigious rankings since the report's inception in 1989.

"The methodology for the rankings has evolved to include more aspects of quality in addition to reputation, which is extremely meaningful to our employees and affiliated physicians," says **Rhonda Abbott, PT, FTPTA, MBA**, senior vice president and CEO of TIRR Memorial Hermann. "Our return to No. 2 confirms our focus on patient outcomes and the quality of care we strive for with all of our patients who need rehabilitation. While the rankings sometimes fluctuate from year to year, they tell the story that we at TIRR Memorial Hermann are leaders in rehabilitation through our focus on research, education, clinical care and advocacy."

The annual *U.S. News* Best Hospitals rankings and ratings, now in their 32nd year, are designed to assist patients and their doctors in making informed decisions about where to receive care for challenging health conditions or for common elective procedures. The *U.S. News* Best Hospitals methodologies in most areas of care are based largely on objective measures such as risk-adjusted survival and discharge-to-home rates, volume and quality of nursing, among other care-related indicators.

Claudia Huerta, RN, CRRN, Pediatric Nurse and Employee of the Year

Claudia Huerta was working toward a degree in business at San Jacinto College in Pasadena when she decided to gain certification as a patient care assistant (PCA).

"I wanted to make sure I could get a stable job with security and started working as a PCA while I was in school," says Huerta, a native Houstonian. "I never actually wanted to be a nurse. We had a program in high school, but I thought it's so cliché to be a teacher or a nurse, and I'm not going to be a nurse. So I decided to study business. But when I started rubbing elbows with the nurses where I worked, I got interested."

In 2012, Huerta transitioned to TIRR Memorial Hermann as a PCA while she was still completing her prerequisites for nursing school. That fall, she started her associate degree in nursing at San Jacinto College. In July 2014, she sat for the exam and earned her RN license.

"I was a new graduate nurse on the 6th floor, the same floor where I had worked as a PCA, so I knew the staff and they were all very supportive. It was a smooth transition," she says. Rehabilitation was Huerta's first experience of nursing practice. At the skilled nursing facility where she had worked as a PCA before joining TIRR Memorial Hermann, she moved up to a restorative tech position, following up on physical therapy and occupational therapy orders and hosting exercise classes in the afternoon.

"In nursing school we didn't have much exposure to rehabilitation," she says. "Seeing these patients set goals and watching their progress taught me that even the smallest things we do help them achieve their goals. Little improvements can make big differences in the lives of patients and their families. Watching a family member come in scared the first day and then seeing them leave with confidence in their ability to take care of their family member–those are the things that make my day."

Huerta completed her Pediatric Advanced Life Support (PALS) training in anticipation of the opening of TIRR's new eight-bed pediatric inpatient unit. She was named Employee of the Year at TIRR Memorial Hermann in 2020, after being nominated by **Rasheeda Simpson, PCA**, and **Heather Hollis, RN, BSN, CRRN**, both of whom work with Huerta on Patient Care Unit 6.

"Claudia inspires staff to be amazing," Simpson says. "If you're having a rough day, her attitude will turn your frown into a smile."

Hollis nominated Huerta for her process improvements. "Claudia initiated a nurse/tech rounding process during her shifts to ensure continuity of care and increase assessments of our patients' skin and bowel and bladder function, which improves care bundling and decreases interruptions in patient therapy and recovery time," she says. "She also initiated a process that allows all disciplines to see when a patient on tube feedings was last fed, decreasing medical complications that lead to increased length of stay and patient decline. Her compassion for our patients is what drives her to be a better nurse and inspires her team to do the same. She is a rock star 100 percent!" ■

Vagus Nerve Stimulation Paired with Rehabilitation:

A Novel Potential Treatment Option for People with Long-term Moderate-to-Severe Arm Impairment After Stroke

A peer-reviewed article co-authored by affiliated physician **Gerard E. Francisco, MD**, chief medical officer at TIRR Memorial Hermann and professor and Wulfe Family Chair in Physical Medicine and Rehabilitation at McGovern Medical School at UTHealth Houston, described a highly promising treatment addressing post-stroke upper-limb weakness. Results of the clinical trial were published in *The Lancet* in April 2021.[1]

The international, multicenter study conducted at institutions across the United States and the United Kingdom investigated the effect of vagus nerve stimulation (VNS) combined with intensive upper-limb therapy on recovery of arm mobility after ischemic stroke. The pivotal study was conducted following two earlier pilot studies that demonstrated the safety and potential efficacy of VNS. In the current study, about half of the patients treated with combined VNS and therapy showed significant improvement in arm movement, compared with only about a quarter of those who received only sham stimulation with intensive therapy.

All 108 study participants had an ischemic stroke between 9 months and 10 years prior to beginning the study protocol and were implanted with the Vivistim® Paired VNS™ System designed by MicroTransponder™, Inc., of Austin, Texas. They were then randomized to one of two groups: Half of the participants received VNS during intensive upper-limb therapy under the supervision of a therapist, while the other half had the implanted device deactivated so that they did not receive actual stimulation during the same therapy program. The supervising therapist activated the device, and delivery of the electrical pulse was timed to coincide with the upper-limb exercises. Stimulation of the vagus

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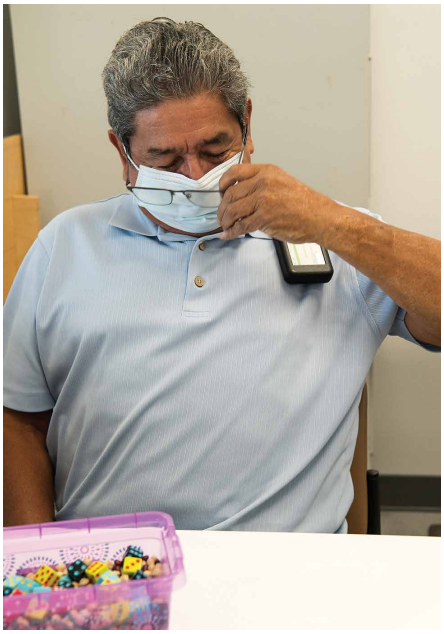
nerve was delivered through a minimal electrical current from a cuff wrapped around the nerve. Participants were not informed of the group to which they had been assigned. In-clinic therapy under therapist supervision was provided 3 times a week for 6 weeks, after which the participants performed a prescribed daily home exercise program for 3 months. While performing the home exercises, the participants activated the VNS themselves.

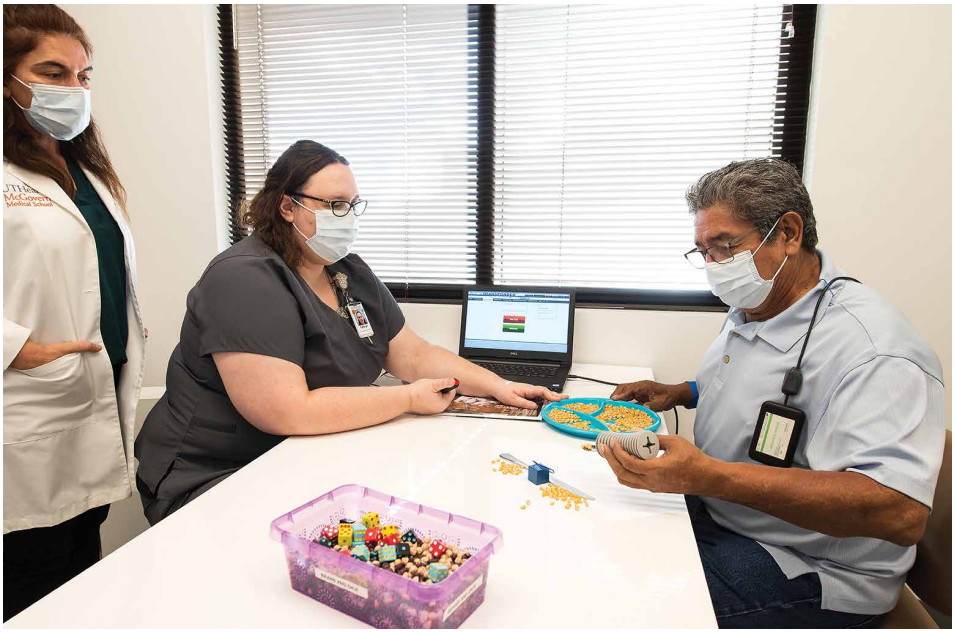
At the end of the first day after completing the 6-week in-clinic therapy, and again 90 days afterward, the participants were re-evaluated using the Fugl-Meyer Assessment-Upper Limb (FMA-UL), a widely used research and clinical assessment tool. At the beginning of the study, participants' FMA-UL scores ranged from 20 to 50 out of 66 (the higher the score, the less impairment exists). Following in-clinic therapy, those who received combined VNS and intensive upper-limb therapy improved their FMA-UL scores by about five points, while those who performed the intensive upper-limb therapy without concomitant VNS improved only by 2.4 points. Ninety days later, the VNS plus therapy group's mean FMA-UL scores improved by 5.8 points, while the therapy-only group improved by a mere average of 2.8 points. Quality of life also improved more for those who received both VNS and therapy.

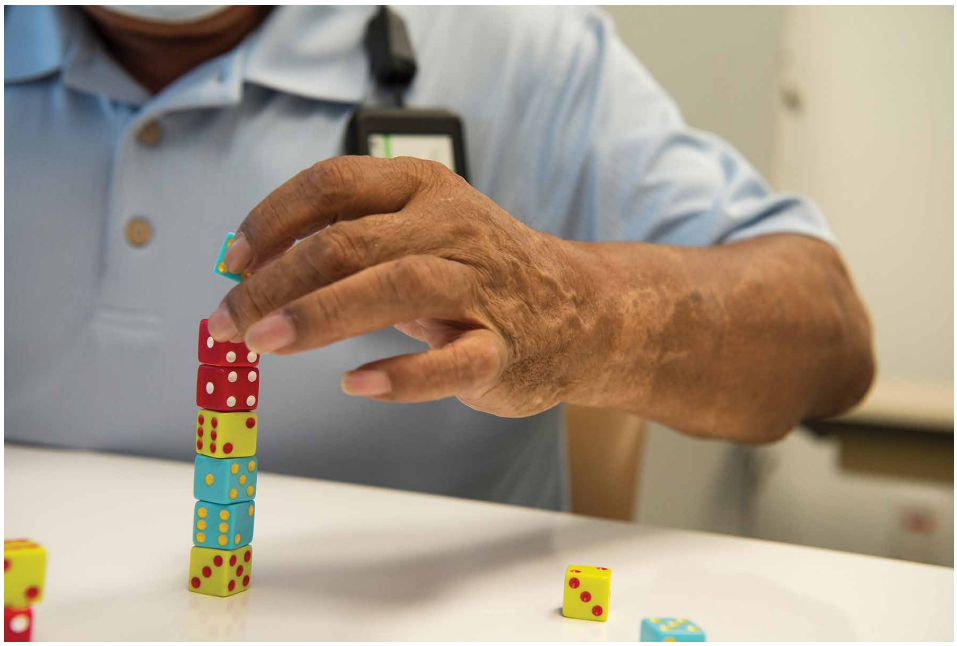
The study also did not result in any unexpected or serious adverse events associated with VNS. "Maximizing recovery and optimizing functional use of the weak limb after a stroke has been a holy grail in rehabilitation," says Dr. Francisco, who directs the Neuro-Recovery Research Center at TIRR Memorial Hermann. "We are fortunate to have participated in this landmark trial that investigated the potential of VNS to increase the ability of some people with post-stroke weakness to use the affected arm and hand once again. VNS may be helping the brain 'rewire' as it recovers from a stroke."

The study was funded by MicroTransponder™. ■

[1] Dawson J, Liu CY, Francisco GE, Cramer SC, Wolf SL, Dixit A, Alexander J, Ali R, Brown BL, Feng W, DeMark L, Hochberg LR, Kautz SA, Majid A, O'Dell MW, Pierce D, Prudente CN, Redgrave J, Turner DL, Engineer ND, Kimberley TJ. Vagus nerve stimulation paired with rehabilitation for upper limb motor function after ischaemic stroke (VNS-REHAB): a randomised, blinded, pivotal device trial. The Lancet. 2021 Apr 24;397(10284):1545-1553.







Hector Alvarez Benefits from Paired Vagus Nerve Stimulation and Therapy

After suffering a stroke in August 2017, Hector Alvarez started physical therapy at TIRR Memorial Hermann – The Woodlands Outpatient Rehabilitation.

"I was useless on the left side, and my wife had to help me with my basic needs," Alvarez says. "When my insurance stopped paying for therapy 6 months later, I was lost and also very frustrated. Then Dr. Francisco invited me to participate in a study at TIRR. He explained the risks and benefits, and I said yes."

TIRR Memorial Hermann affiliated physician **Gerard Francisco, MD**, is chief medical officer at TIRR Memorial Hermann and professor and Wulfe Family Chair in Physical Medicine and Rehabilitation at McGovern Medical School at UTHealth Houston. The study he asked Alvarez to participate in was a pivotal, randomized, triple-blind, sham-controlled trial conducted in 19 stroke rehabilitation centers in the United Kingdom and the United States.[1] As a stroke survivor with moderate-to-severe arm weakness at least 9 months and up to 10 years after ischemic stroke, he was eligible for the study.

Alvarez was one of 108 study participants randomly assigned to either rehabilitation paired with active vagus nerve stimulation–the VNS group–or rehabilitation paired with sham stimulation–the control group. Participants, outcomes assessors and treating therapists were masked to group assignment. All participants were implanted with a vagus nerve stimulation device and received 6 weeks of in-clinic therapy 3 times a week for a total of 18 sessions, followed by a home exercise program.

Alvarez, who had no discomfort or side effects from the implant, went to the TIRR Memorial Hermann Research Center for the study, where he worked with **Nuray Yozbatiran, PT, PhD**,

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"My wife had to help me with my basic needs, I was lost and also very frustrated."

Hector Alvarez

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co-investigator and research associate professor at McGovern Medical School.

"We assessed participants before intensive therapy with a list of predefined therapy activities, all of which were aimed at using the affected arm," Yozbatiran says. "Hector had weakness in his left arm. He was quite independent and working as a translator, trying to continue his daily life. His impairment was not too severe, but he was relying on his non-affected arm and needed help with the activities of daily living."

Yozbatiran's goal was to exercise his arm within the possible range of tasks that he was able to perform in the treatment session, including large movements and smaller, more precise movements. "We selected tasks based on patient performance, but we were challenging each participant to the max in every session," she says. "The therapy is quite intensive, but Hector tolerated it well with no adverse events. He was a great candidate for this particular study."

Per the study protocol, after patients completed long-term follow-up, they were unblinded and those in the control group were invited to undergo 6 weeks of therapy with the VNS stimulator activated. "Not all randomized controlled trials offer active therapy to all participants after the primary follow-up endpoint has been reached," Yozbatiran says. "The specific design of this protocol ensured that all participants would benefit from the clinical trial."

Ninety days after in-clinic therapy, a clinically meaningful response on the Fugl-Meyer Assessment-Upper Extremity (FMA-UE) score was achieved in 47 percent of the 53 patients in the VNS group versus 24 percent of the 55 in the sham control group.

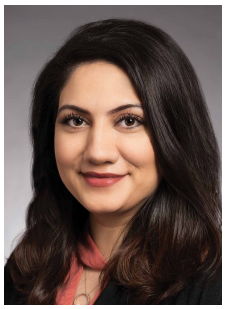
"I was satisfied with my progress," Alvarez says. "I didn't regain complete use of my arm, but I improved dramatically after therapy and was able to do things I couldn't do before, including work on my car engine. My main goal is still to regain the ability I had before the stroke. After the study, I wanted to follow through with therapy to get full benefit from the implant."

Alvarez was approved for further therapy in April of this year. "After nine home visits, I made a very dramatic improvement with my left hand and walking, but I still feel I need more. I'm 75 and have young children, and I won't quit on them. My only option is to move forward and keep working to overcome this." ■

[1] Dawson J, Liu CY, Francisco GE, Cramer SC, Wolf SL, Dixit A, Alexander J, Ali R, Brown BL, Feng W, DeMark L, Hochberg LR, Kautz SA, Majid A, O'Dell MW, Pierce D, Prudente CN, Redgrave J, Turner DL, Engineer ND, Kimberley TJ. Vagus nerve stimulation paired with rehabilitation for upper limb motor function after ischaemic stroke (VNS-REHAB): a randomised, blinded, pivotal device trial. The Lancet. 2021 Apr 24;397(10284):1545-1553.

WELCOME

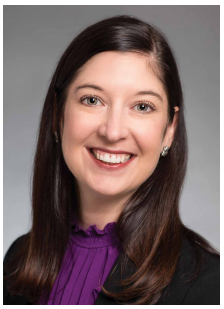
TIRR Memorial Hermann Welcomes Dr. Simra Javaid



Simra Javaid, DO, is an affiliated physician who joined the medical staff of TIRR Memorial Hermann and the faculty of McGovern Medical School at UTHealth Houston in September 2021. Her clinical interests within pediatric rehabilitation include traumatic brain injury, polytrauma, spinal cord injury and spasticity management. She is also passionate about ensuring that all pediatric patients have access to equitable care, mentoring trainees and program building.

Dr. Javaid received her bachelor's degree in human biology at The University of Texas at Austin, where she worked as a lab research assistant. She earned her medical degree at Touro University of Nevada College of Osteopathic Medicine in 2014, with honors in pediatrics, surgery, family medicine, internal medicine, psychiatry, obstetrics and gynecology, and physical medicine and rehabilitation. She completed residency training in physical medicine and rehabilitation at the Rehabilitation Institute of Michigan and Wayne State University. She went on to complete fellowship training at UT Southwestern, Children's Health in Dallas.

Dr. Javaid is certified by the American Board of Physical Medicine and Rehabilitation and practices with pediatric physiatrist Stacey Hall, DO. She was recruited to accommodate the growth in TIRR Memorial Hermann's new pediatric inpatient unit and pediatric outpatient services. ■



Christine Adair Promoted to Chief Operating Officer

Christine Adair, MBA, MOT, OT, has been promoted to vice president of operations at TIRR Memorial Hermann, Memorial Rehabilitation Hospital-Katy and the Memorial Hermann Rehabilitation Network.

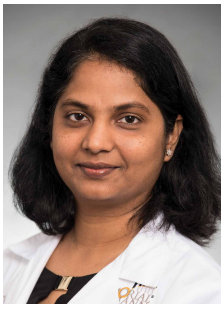
Adair joined TIRR Memorial Hermann in 2005 as an occupational therapist after completing her bachelor's degree in psychology at the University of Rhode Island in Providence and her master's degree in occupational therapy at New York University in New York City. After several years of service in a clinical role at TIRR Memorial Hermann, she expanded her experience by consulting in OT and education before returning to TIRR Memorial Hermann in 2010 as a senior occupational therapist.

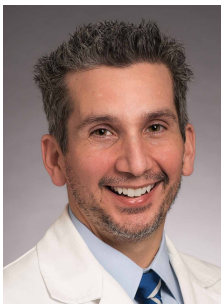
Adair advanced to weekend therapy manager and then joined Memorial Hermann Greater Heights Hospital as director of rehabilitation, where she led the unit through TIRR Memorial Hermann branding and recognition as the first Memorial Hermann community hospital to achieve Commission on Accreditation of Rehabilitation Facilities (CARF) designation. She also has held roles as director of the TIRR Memorial Hermann Education Academy and director of operations at Memorial Hermann Rehabilitation Hospital-Katy.

In 2020, she received her MBA from West Texas A&M University and in 2021 joined the senior leadership team at TIRR Memorial Hermann and the Memorial Hermann Rehabilitation Network. In her current position she is responsible for operations and clinical services at two freestanding inpatient rehabilitation hospitals–TIRR Memorial Hermann and Memorial Hermann Rehabilitation Hospital-Katy–as well as several rehabilitation units within Memorial Hermann hospitals and seven outpatient locations. She participates in System-wide initiatives to promote efficiency with operations across divisions.

Adair completed Quality of Texas Examiner Training in 2017 and 2019 and received her Graduate Certificate in Health Care Management from Rice University in 2017. She is a member of the American College of Healthcare Executives and of the Memorial Hermann Women Leaders Membership and Champions Committee. ■

Dr. Radha Korupolu and Dr. Argy Stampas Receive Master's Degrees in Clinical Research





Affiliated physicians **Radha Korupolu, MD, MS**, and **Argyrios Stampas, MD, MS**, have been awarded Master of Science in Clinical Research degrees at McGovern Medical School at UTHealth Houston. The degree program is designed for faculty and clinical fellows who wish to receive formal training as they build careers in patient-oriented research. It provides a focused, flexible and affordable program that trains clinical investigators to conduct exemplary research and be competitive in seeking research support.

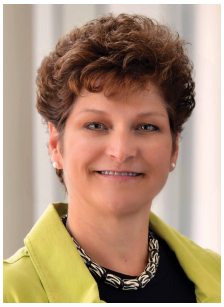
"It's an amazing course that taught me how little I really know about research, despite the fact that I have conducted it for many years," says Dr. Korupolu, an attending physician in the Spinal Cord Injury Program at TIRR Memorial Hermann and an associate professor in the Department of Physical Medicine and Rehabilitation at McGovern Medical School at UTHealth Houston. "It changed the way I think about clinical research and equipped me with skills to conduct robust clinical trials with available resources."

Dr. Korupolu's clinical interests include spinal cord injury, spasticity, neurorehabilitation and general rehabilitation. Her research is focused on neuromodulation, transcutaneous spinal direct current stimulation, motor recovery after spinal cord injury (SCI), neurogenic bladder and early rehabilitation in the intensive care unit.

Dr. Stampas is spinal cord injury medicine research director at TIRR Memorial Hermann and an associate professor in the Department of PM&R at McGovern Medical School at UTHealth Houston. He was motivated to apply to the master's program to advance knowledge in the field.

"Because SCI is a relatively rare diagnosis, different clinical trial designs and statistical methods must be used to account for the small sample sizes," he says. "I gained a tremendous amount of knowledge about conducting clinical trials, critical analysis of published research studies and a greater understanding of statistics as used in clinical trials."

Dr. Stampas' research goal is to improve care by advancing the field of acute rehabilitation using electric stimulation to prevent problems commonly found in chronic SCI, including neurogenic bladder, autonomic dysfunction and spasticity. He currently has funding for two large clinical trials focused on neuromodulation to improve neurogenic bladder outcomes and decrease the use of medications for overactive bladder. ■

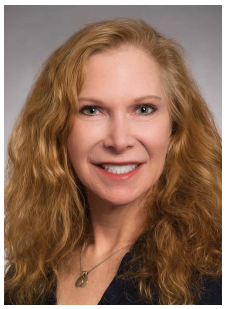


Susan Robinson-Whelen, PhD, Recognized at the 2021 ASIA Annual Scientific Meeting

Susan Robinson-Whelen, PhD, assistant professor of physical medicine and rehabilitation at Baylor College of Medicine, received the First Place Oral Presentation Award at the 2021 Annual Scientific Meeting of the American Spinal Injury Association (ASIA) held July 8-10 in St. Louis, Mo. Her presentation was entitled "Lifetime Abuse Experience of Women with SCI."

Robinson-Whelen, an affiliated scientist and co-investigator on the Texas Model Spinal Cord Injury System and TIRR Memorial Hermann's Spinal Cord Injury and Disability Research Center (SCIDR), has a background in clinical psychology and its application to projects focused on promoting health in women with disabilities. She leads a program of research on spinal cord injury health and wellness, focused on improving the psychosocial health and wellbeing of people with SCI, improving weight management of people with SCI, and understanding and addressing the needs of women with SCI. ■

Dr. Cindy Ivanhoe Receives the Sheldon Berrol Clinical Service Award



Cindy Ivanhoe, MD, affiliated professor of physical medicine and rehabilitation at McGovern Medical School at UTHealth Houston, has received the 2021 Sheldon Berrol, MD, Clinical Service Award from the Brain Injury Association of America (BIAA). The award is presented each year to an individual who, through a long service career, has made outstanding contributions to improving quality of care, professional training and education in the field of brain injury. Dr. Ivanhoe is a senior fellow in the American Leadership Forum and director of the Spasticity and Associated Syndromes of Movement (SPASM) program at TIRR Memorial Hermann. She is also an admitting physician and consultant to the Brain Injury and Stroke Program at TIRR Memorial Hermann.

"I am honored to join the distinguished list of so many friends and colleagues, people I admire, who have received the Berrol Clinical Service Award," Dr. Ivanhoe says. "I want to acknowledge the late Dr. Bontke, who opened a professional door for me as a mentor in so many ways, and who even gave me Dr. Berrol's copy of *Plum and Posner*. In a time when advocating for patients, clinical ethics and education is challenged and challenging, this award serves as an acknowledgment that the battle is worth it. I want to acknowledge the patients and their families who remind me of what matters, the value of small victories and the strength of the human spirit."

Dr. Ivanhoe is board certified in physical medicine and rehabilitation and in brain injury medicine. She is recognized for her expertise in the treatment of spasticity, pioneering the clinical use of interventions, including intrathecal baclofen therapy, for which she was an investigator on studies leading to its FDA approval. Her clinical experience has spanned the entire spectrum of brain injury from developmental disabilities, neurosurgical ICU and acute rehabilitation to long-term follow-up in the community. Most recently, she was named Physician of the Year 2020 by TIRR Memorial Hermann and also received the Dean's Excellence in Teaching Award at McGovern Medical School. ■

Angelle Sander, PhD, Promoted to Professor at Baylor College of Medicine

Angelle Sander, PhD, has been promoted to full professor in the H. Ben Taub Department of Physical Medicine and Rehabilitation at Baylor College of Medicine, where she is director of the Division of Clinical Neuropsychology and Rehabilitation Psychology. Sander is also director and senior scientist at the Brain Injury Research Center at TIRR Memorial Hermann and a neuropsychologist at Harris Health System.

Sander received her bachelor's degree at Loyola University of New Orleans, her master's at Emporia State University in Kansas and her PhD at the University of Houston, University Park. She went on to complete advanced training at the Medical College of Virginia / Virginia Commonwealth University in Richmond.

She currently serves as co-chair of the participation workgroup for the National Institute of Neurological Disorders and Stroke's Neurorehabilitation Common Data Elements Development. She is a member of a multinational workgroup on changes to sense of self–caused by traumatic brain injury. The group presented symposiums at the virtual meeting of the Australian Society for the Study of Brain Injury earlier this year in Melbourne and at the American Congress of Rehabilitation virtual meeting in September 2021. A special issue of *Neuropsychological Rehabilitation* will be published based on their work. ■

MESSAGE FROM THE CEO

At TIRR Memorial Hermann, we are celebrating our return to No. 2 in the *U.S. News & World Report* Best Hospital rankings for 2021-2022. We have been here before, and with our 62-year legacy of strength in rehabilitation and the inclusion of quality metrics in this year's ranking methodology, we are back again.

I would like to dedicate this incredible achievement to two remarkable groups of people. To the patients, families and individuals in our community with disabilities: your trust in TIRR Memorial Hermann allows us to break the chains of our own limitations. To our team members, affiliated physicians and volunteers: your dedication to creating breakthroughs for those we serve pushes our outcomes higher. We can accomplish nothing without all of you.

Supporting the community is an impactful part of our history. In the 1960s, we were among the founders of the independent living movement, a worldwide movement of people with disabilities working for equal opportunities, self-determination and respect. Our leadership came through the work of Lex Frieden, director of the Independent Living Research Utilization program at TIRR, who also was an architect of the Americans with Disabilities Act of 1990. Today, we are creating a strategic plan that will allow us to connect even more profoundly with the community in ways that improve the lives of people with disabilities.

There is more to come. Our clinicians innovate in every patient interaction, and our researchers are leading the way in the use of advanced therapies. We are creating an innovation hub, an incubator to accelerate progress in clinical and translational research in rehabilitation.

Now that Christine Adair, MBA, MOT, OT, has joined our executive team as vice president of operations and COO, the gang's all here. Nicole Harrison, MBA, BSN, RN, NEA-BC, vice president and chief nursing officer, leads our accomplished nursing team. Affiliated physician Gerard Francisco, MD, FAAPMR, is chief medical officer and professor and Wulfe Family Chair in Physical Medicine and Rehabilitation at McGovern Medical School at UTHealth Houston. As our CMO since 2009, he has recruited accomplished physicians and researchers, fortified existing programs and developed new programs to meet patient needs. Jessica Graham, MBA, vice president of finance and chief financial officer and an excellent strategist, is with us again, ensuring that we meet our financial goals.

Together, with the entire TIRR Memorial Hermann team, we are building on our foundation of excellence and moving forward to enhance independence and empower people with disabilities.

Rhonda Abbott, PT, FTPTA, MBA
Senior Vice President and Chief Executive Officer
TIRR Memorial Hermann System
Executive for Rehabilitation Services
Memorial Hermann Health System

GRANTS

The **Administration for Community Living** has received a $5.56 million grant from the National Institute on Disability, Independent Living and Rehabilitation Research (NIDILRR) to continue operating the Southwest ADA Center for the next 5 years. The award will allow the Center, a program of Independent Living Research Utilization at TIRR Memorial Hermann, to continue its work as the southwest's leading resource on the Americans with Disabilities Act and related disability rights laws. The Southwest ADA Center has been funded since 1991.

The Disability Vaccine Access (DVAO) Center, a national center funded by the Centers for Disease Control and Prevention (CDC), will further offer vaccination access for people with disabilities. The prime recipient of the grant is Able South Carolina, a consumer-directed center for independent living (CIL). **Independent Living Research Utilization** at TIRR Memorial Hermann, managed and operated by people with disabilities, is the principal partner and contractor. The DVAO Center will support local disability-run CILs to ensure people with disabilities have full access to vaccines for COVID-19. The $6.3 million grant is provided by the CDC Foundation of Atlanta, GA.

Radha Korupolu, MD, MS, affiliated associate professor of physical medicine and rehabilitation at McGovern Medical School at UTHealth Houston and an attending physician in the Spinal Cord Program at TIRR Memorial Hermann, has received a Clinical and Translational Science Center KL2 Award in support of a pilot randomized comparative effectiveness trial comparing mechanical ventilation with low and high tidal volumes in acute spinal cord injury. KL2 awards support mentored research career development for clinical investigators who are commencing basic, translational and/or clinical research.

Argyrios Stampas, MD, affiliated assistant professor of physical medicine and rehabilitation at McGovern Medical School, has received a KL2 training grant for research pertaining to bladder conditions for spinal cord injury patients. The awards are granted by the UTHealth Houston Center for Clinical and Translational Sciences, funded by the Clinical and Translational Science Awards (CTSA) Program of the National Institutes of Health.

SELECTED PUBLICATIONS

Li S, Francisco GE, Rymer WZ. A new definition of post-stroke spasticity and the interference of spasticity with motor recovery from acute to chronic stages. Neurorehabilitation and Neural Repair. Published online May 12, 2021. The authors assert that spasticity results from up-regulation of medial cortico-reticulospinal pathways that are disinhibited due to damage of the motor cortex or corticobulbar pathways. Spasticity emerges as a manifestation of maladaptive plasticity in the early stages of recovery and can persist into the chronic stage. They propose a new definition of spasticity to better account for its pathophysiology and the complex nuances of different definitions of motor recovery.

Sander AM, Ketchum JM, Lequerica AH, Pappadis MR, Bushnik T, Hammond FM, Sevigny M. Primary Language and Participation Outcomes in Hispanics with Traumatic Brain Injury: A Traumatic Brain Injury Model Systems Study. Journal of Head Trauma Rehabilitation. 2021 Jul-Aug 01;36(4):E218-E225. This study examined the relationship between primary language and participation outcomes in English- and Spanish-speaking persons with complicated mild-to-severe traumatic brain injury at 1 year post-injury. Participants included a total of 998 Hispanics with outcomes available at year 1 follow-up; 492 (49%) indicated English as their primary language, and 506 (51%) indicated Spanish as their primary language.

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Yozbatiran N, Russell MB, Korupolu R, Grossman R, Toups E, Francisco GE. Reliability of peg-restrained intrinsic muscle evaluator for measurement of intrinsic hand muscle strength in adults with tetraplegia. Journal of the International Society of Physical and Rehabilitation Medicine. 2021;4(1):34-39.

Zhang B, Won W, **O'Brien K, Li S**. A Retrospective Analysis on Clinical Practice-based Approaches Using Zolpidem and Lorazepam in Disorders of Consciousness. Brain Sciences. 2021 May 29;11(6):726.

SELECTED PRESENTATIONS

Angelle Sander, PhD, delivered the invited presentation "Managing Stress as a Brain Injury Caregiver: A Mindful Approach" to the Brain Injury Association of Maine on April 22, 2021. Sander is professor and director of the Division of Clinical Neuropsychology and Rehabilitation Psychology at Baylor College of Medicine, director and senior scientist at the Brain Injury Research Center at TIRR Memorial Hermann, and a neuropsychologist at Harris Health System.

Hernandez Jimenez I. The Current State of Spinal Cord Injury Rehabilitation in Latin America. Oral presentation (third-place award), along with Castillo C and Longoni M. 2021 Annual Scientific Meeting of the American Spinal Injury Association. Hybrid. July 8-10, 2021.

Hernandez Jimenez I, Di Giusto ML, Terson de Paleville D, Castillo C. **The COVID-19 Pandemic in Latin America and the Impact on Spinal Cord Injury Rehabilitation: Highlighting Challenges and Identifying the Potential. Virtual International Society of Physical and Rehabilitation Medicine 2021 Congress, June 2021.**

Li S. Phenol Neurolysis: A "Dying Art" That Merits Revival. Canadian Advances in Neuro-Orthopedics. Invited presentation at International Webinar, CME. 2021.

Li S. Updates on Phenol Neurolysis for Spasticity Management. UT Southwestern PMR Department Grand Rounds Talk. June 2021.

Li S. Post-stroke Hemiplegic Gait. Invited Grand Rounds Talk at NYU PMR Department. April 2021.

Li S. Pathophysiology of Spasticity and Contractures in Stroke–What's New: A Scientist's Perspective. Invited plenary presentation and panel discussion at the World Congress for the Management of Post-stroke Spasticity (virtual), Feb. 2021.

Li S. Improving Botulinum Toxin Efficiency in Treating Post-stroke Spasticity Using 3D Innervation Zone Imaging. Invited plenary presentation at the World Congress for the Management of Post-stroke Spasticity (virtual), Feb. 2021.

Li S. The Role of Hyperexcitability. Invited plenary presentation at the World Congress for the Management of Post-Stroke Spasticity (virtual), Feb. 2021.

Robinson-Whelen S, Hughes RB, **Taylor HB**, Norah-Davis L, Gonzales DS. Lifetime Abuse Experience of Women with SCI. Presentation at the Annual Scientific Meeting of the American Spinal Injury Association. July 2021.

Robinson-Whelen S, Hughes RB, **Taylor HB**, Norah-Davis L, Gonzales DS, and the Zest Consortium. Promoting the Psychological Health of Women with SCI: A Virtual World Intervention. Presentation at the Annual Scientific Meeting of the American Spinal Injury Association, July 2021.

Sander AM. Managing Stress as a Brain Injury Caregiver: A Mindful Approach. Invited presentation at the Brain Injury Association of Maine, April 2021.

Stampas A, Donaldson N, French J, Bourbeau D. Restoring Bladder Function After Spinal Cord Injury. Translational session. 10th International IEEE EMBS Conference on Neural Engineering, May 2021.

Stampas A, Donaldson N, French J, Bourbeau D. Restoring Bladder Function After Spinal Cord Injury. Translational session. Annual ASIA Conference, July 2021.

Stampas A, Donaldson N, French J, Bourbeau D. Restoring Bladder Function: An Interactive Session Between Clinician, Engineer and Person with SCI Lived Experience. Translational session. Annual ASIA Conference, July 2021.

SELECTED PUBLICATIONS

Stampas A, Gay M, Chaniongbutra A, Willis T, Bailey K, Hawkins Y, Merchant C. Scholars Networking Session with Federal Training Partners. Association for Clinical and Translational Science Annual Meeting, March 2021.

Taylor HB. Resilience and Health Outcomes in Chronic SCI. Presented as part of the Research from the SCI Model Systems Pre-course: Understanding Spinal Cord Injury from Cell to Community. American Spinal Injury Association, St. Louis, Missouri.

VandenBerg J, **Hernandez Jimenez** I. Partial Medial Gastrocnemius Tear with Hematoma Due to Exoskeleton-Assisted Walking Injury: Case Report. Submitted as a poster; accepted as an oral presentation by Dr. VandenBerg, a fellow at the time of submission. American Spinal Cord Injury Scientific Meeting. July 2021.

Anderson KD, Wilson JR, **Korupolu R,** Pierce J, Bowen JM, O'Reilly D, Kapadia N, Popovic MR, Thabane L, Musselman KE. Multicentre, Single-blind Randomized Controlled Trial Comparing MyndMove Neuromodulation Therapy with Conventional Therapy in Traumatic Spinal Cord Injury: A Protocol Study. BMJ Open. 2020;10(9):e039650.

Azbell J, Park J, **Chang SH,** Engelen MPKG, Park H. Plantar or Palmar Tactile Augmentation Improves Lateral Postural Balance with Significant Influence from Cognitive Load. IEEE Transactions on Neural Systems and Rehabilitation Engineering. 2021;29:113-122. Epub 2021 Feb. 26.

Berning J, **Francisco GE, Chang SH,** Fregly BJ, **O'Malley MK.** Myoelectric Control and Neuromusculoskeletal Modeling: Complementary Technologies for Rehabilitation Robotics. Current Opinion in Biomedical Engineering. 2021 Jun. 24:100313.

Brett BL, Kramer MD, Whyte J, McCrea MA, Stein MB, Giacino JT, **Sherer M,** Markowitz AJ, Manley GT, Nelson LD, and the TRACK-TBI Investigators. Latent Profile Analysis of Neuropsychiatric Symptoms and Cognitive Function of Adults 2 Weeks After Traumatic Brain Injury: Findings from the TRACK-TBI Study. JAMA Network Open. 2021;4(3):e213467.

Di Giusto ML, Grover P, Castillo C, **Hernandez Jimenez I**, Garcia JC, Tijerina R, et al. The State of Pulmonary Rehabilitation in Latin American During the COVID-19 Pandemic. International Journal of Physical and Rehabilitation Medicine. 2021 Jan. 1;4(1):40.

Houston M, Li X, **Zhou P**, Li S, Roh J, Zhang Y. Alterations in Muscle Networks in the Upper Extremity of Stroke Survivors. IEEE Transactions on Neural Systems and Rehabilitation Engineering. 2021 Apr. 26:1026-1034

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Karri J, Li S, Chen Y-T, **Stampas A, Li S**. Observation of Autonomic Variability Following Central Neuromodulation for Chronic Neuropathic Pain in Spinal Cord Injury. Neuromodulation: Technology at the Neural Interface. 2021;24(3):427-433.

Korupolu R, Stampas A, Hernandez Jimenez I, Cruz D, Di Giusto LM, Verduzco-Gutierrez M, **Davis M**. Mechanical Ventilation and Weaning Practices for Adults with Spinal Cord Injury: An International Survey. Journal of the International Society of Physical and Rehabilitation Medicine. In press.

Li S, Francisco GE, Rymer WZ. A New Definition of Post-stroke Spasticity and the Interference of Spasticity with Motor Recovery from Acute to Chronic Stages. Neurorehabilitation and Neural Repair. Published online May 12, 2021.

Li X, Lu Z, Wang I, Li L, **Stampas A, Zhou P**. Assessing Redistribution of Muscle Innervation Zones After Spinal Cord Injuries. Journal of Electromyography and Kinesiology. 2021 May 3;59:102550. Epub ahead of print.

Neumann D, **Sander AM**, Perkins SM, Bhamidipalli SS, Hammond FM. Negative Attribution Bias and Related Risk Factors After Brain Injury. Journal of Head Trauma Rehabilitation. 2021 Jan.-Feb. 01;36(1):E61-E70.

Neumann D, **Sander AM**, Witwer N, Jang JH, Bhamidipalli SS, Hammond FM. Evaluating Negative Attributions in Persons with Brain Injury: A Comparison of 2 Measures. Journal of Head Trauma Rehabilitation. 2021 May-Jun. 01;36(3):E-170-E177.

Noyes ET, Tang X, **Sander AM**, Silva MA, Walker WC, Finn JA, Cooper DB, Nakase-Richardson R. Relationship of Medical Comorbidities to Psychological Health at 2 and 5 years Following Traumatic Brain Injury (TBI). Rehabilitation Psychology. 2021 May;66(2):107-117.

Pinto D, Garnier M, Barbas J, **Chang S-H**, Charlifue S, Field-Fote E, Furbish C, Tefertiller C, Mummidisetty CK, **Taylor H**, Jayaraman A, Heinemann AW. Budget Impact Analysis of Robotic Exoskeleton Use for Locomotor Training Following Spinal Cord Injury in Four SCI Model Systems. Journal of NeuroEngineering and Rehabilitation. 2020 Jan. 10;17(1):4.

Robinson-Whelen S, Hughes RB, **Taylor HB**, Markley R, Vega JC, Nosek TM, Nosek MA. Promoting Psychological Health in Women with SCI: Development of an Online Self-esteem Intervention. Disability and Health Journal. 2020;13(2).

Sander AM, Clark A, **Arciniegas D**, Tran K, Leon Novelo L, Ngan E, Bogaards J, **Sherer M**, Walser R. A Randomized Controlled, Blinded Trial of Acceptance and Commitment Therapy for Psychological Distress Among Persons with Traumatic Brain Injury. Neuropsychological Rehabilitation. 2021;31:1105-1129.

Sander AM, Ketchum JM, Lequerica AH, Pappadis MR, Bushnik T, Hammond FM, Sevigny M. Primary Language and Participation Outcomes in Hispanics with Traumatic Brain Injury: A Traumatic Brain Injury Model Systems Study. Journal of Head Trauma Rehabilitation. 2021 Jul.-Aug. 01;36(4):E218-E225.

Sherer M, Katz DI, Bodien YG. Seeking Clarity About Confusion. Archives of Physical Medicine and Rehabilitation. 2021;102:339-340.

Whyte J, Giacino JT, Heinemann AW, Bodien Y, Hart T, **Sherer M**, Whiteneck GG, Mellick D, Hammond FM, Semik P, Rosenbaum A, Richardson RN. The Brain Injury Functional Outcome Measure (BI-FOM): A Single Instrument Capturing the Range of Recovery in Moderate-Severe Traumatic Brain Injury. Archives of Physical Medicine and Rehabilitation. 2021;101:87-96.

Williams MW, Rapport LJ, **Sander AM**, Parker HA. Pain Anxiety and Rehabilitation Outcomes After Acquired Brain Injury. Brain Injury. 2021;35(1):32-40.

Woo J, Mas MF, Zhang J, Wong B, **Stampas A, Francisco GE, Li S**. Real-world Analysis of Botulinum Toxin (BoNT) Injections in Post-stroke Spasticity: Higher Doses of BoNT and Longer Intervals in the Early-start Group. Journal of the Neurological Sciences. 2021 Jun. 15;425:117449. Epub 2021 Apr 17.

PODCASTS

Isaac Hernandez Jimenez, MD, and Yahir Santiago-Lastra, MD, presented three podcasts, ¿Qué es la vejiga neurogénica? Para pacientes y familiares (What Is Neurogenic Bladder – for Patients and Family Members); ¿Qué es la vejiga neurogénica? Para profesionales de la salud (What Is Neurogenic Bladder – for Healthcare Providers); and ¿Qué es la vejiga neurogénica en el niño? Para pacientes y familiares (What Is Neurogenic Bladder in Children – for Patients and Family Members). All three podcasts were hosted in Spanish for the Bladder Buzz podcast as part of a project from the Rehabilitation Research and Training Center on Neurogenic Lower Urinary Tract Dysfunction.

Find them at https://www.buzzsprout.com/1290071/7923865; https://www.buzzsprout.com/1290071/7923829; https://www.buzzsprout.com/1290071/8507051.

WEBINARS

Petty R. CIL Pandemic Response: CARES Act Funds and Other Opportunities for Innovative CIL Actions. March 3, 2021.

Petty R. CIL Pandemic Response: How CILs Can Initiate Emergency Relocations and Transitions During the COVID-19 Pandemic. March 11, 2021.

Petty R. How CILs Can (and Should!) Support Consumers Experiencing Homelessness. June 30, 2021.

BOOK CHAPTERS

Korupolu R, Stampas A, Tallavajhula S, Sawaki L. Electrophysiological Outcome Measures in Spinal Cord Injury: A New Narrative. In: Preedy V (Ed.) Neuroscience of Spinal Cord Injury: Cellular Mechanisms to Medical Management. Elsevier; 2021 (Accepted).

Korupolu R, Jethani L. Phenol Neurolysis for the Management of Spasticity in People with Spinal Cord Injury. In: Preedy V (Ed.) Neuroscience of Spinal Cord Injury: Diagnosis and Treatment of Spinal Cord Injury. Elsevier; 2021 (Accepted)

Yozbatiran N, Russell MB, Korupolu R, Grossman R, Toups E, Francisco GE. Reliability of Peg-restrained Intrinsic Muscle Evaluator for Measurement of Intrinsic Hand Muscle Strength in Adults with Tetraplegia. Journal of the International Society of Physical and Rehabilitation Medicine. 2021;4(1):34-39.

Zhang B, Darji N, **Francisco GE**, Li S. The Time Course of Onset and Peak Effects of Phenol Neurolysis. American Journal of Physical Medicine & Rehabilitation. 2021 Mar. 1;100(3):266-270.

Zhang B, Huang K, Karri J, **O'Brien K**, Di Tomasso C, Li S. Many Faces of Souls: Neurological and Medical Complication in Disorders of Consciousness. Brain Sciences. 2021 May 10;11(5):608.

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Zhu F, Kern M, Fowkes E, Afzal T, Contreras-Vidal JL, **Francisco GE, Chang SH**. Effects of an Exoskeleton-assisted Gait Training on Post-stroke Lower-limb Muscle Coordination. Journal of Neural Engineering. 2021 Jun. 4;18(4).

Memorial Hermann Health System

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Winter 2022

About TIRR Memorial Hermann

TIRR Memorial Hermann, a leader in rehabilitation, does more than provide therapy. We provide rehabilitation beyond the healthcare setting for children and adults with a disabling injury or illness, and change lives by helping people regain the skills and confidence they need to reintegrate into the community and continue living full and meaningful lives. Our highly trained rehabilitation teams see the potential in every person they work with and develop that potential to the fullest through customized goal setting and treatment planning.

We work to maximize independence, restore function and improve the quality of life for our patients. To achieve these goals, we put the individual patient and their family at the center of the rehabilitation team and provide them with the information and skills they need to transition successfully to community settings.

TIRR Memorial Hermann is the best rehabilitation hospital in Texas and among the best in the nation, according to the *U.S. News & World Report*'s Best Hospital rankings for 2020-2021. The rehabilitation hospital's ranking marks its 31st consecutive year among the magazine's Best Hospital rankings.

To make referrals or schedule an appointment, call 800.44REHAB (800.447.3422) toll-free or 713.797.5942, or fax 713.797.5988.

We have opportunities for outstanding rehabilitation professionals. If you are interested in joining our team at one of U.S. News & World Report's leading rehabilitation hospitals, view all available opportunities at memorialhermann.org, tirr.memorialhermann.org, or ilru.org.

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