## BRO KS BEYOND >>

#### PARTNERING FOR BETTER PATIENT OUTCOMES

"IT'S IN OUR DNA"

s p r i n g 2019





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## Doug Baer



Dr. Brown understood that collaboration is critical for teams, organizations and communities to achieve their best results. Partnerships and collaborations are particularly important in the healthcare industry to achieve the best possible outcomes for the patients and families we serve. This philosophy manifests itself in so many ways for us.

The Brooks organization focuses on rehabilitation delivered in multiple settings of care. This focus allows us to excel in our field. We work closely with all the hospitals, physicians, insurers and other providers in our region to ensure coordinated care across the continuum.

New treatments and protocols are developed by working with academic institutions to conduct rehabilitation research. Affiliations with healthcare manufacturers produce new technologies, like the Cyberdyne robotic partnership.

Close relationships exist with our local universities. These partnerships result in better trained clinicians for our workforce, which ultimately results in better care for our patients.

It is also important to collaborate on a regional and national level. Brooks works closely with our State and National legislators to advocate for important regulatory and legislative policies, which can assist our patients. We are also active with our industry associations and participate with a group of other leading rehabilitations systems around the country to benchmark results and share best practices.

"Every endeavor is a team effort and. without collaboration of the team, the result will be diminished."

J. Brooks Brown, MD

Collaborations and partnerships are also important within the organization. Physicians, therapists, nurses, other clinical professionals and support personnel work as a team and rely on each other's expertise. Our system of care extends beyond our clinical settings.

To enable our patients to achieve their highest quality of life, we have developed community programs including our Adaptive Sports and Recreation program, Neuro Recovery Centers, Clubhouse, Aphasia Center and Wellness programs which allow our families to continue the recovery process beyond their clinical stay. Also, collaborative community activities, such as our recent Celebrate Independence event, allow community members of all abilities to ome together and be inspired.

Identifying the best people and organizations to partner with are key to success. Communicating with these partners regularly, challenging each other to enhance existing arrangements and finding new and innovative processes and technologies to provide even better care for our patients and families is our focus. Working together we will achieve better results!

If you want to go fast, go alone. If you want to go far, go together – African Proverb

Aufus h. Baren



Having joined us in 2014, Geneva Tonuzi, MD, serves as Medical Director, Spinal Cord Injury (SCI) Program and Medical Director, Brooks Cybernic Treatment Center (BCTC), at Brooks Rehabilitation Hospital. Dr. Tonuzi is board certified in both Physical Medicine and Rehabilitation (PM&R) and Spinal Cord Injury Medicine. Dr. Tonuzi is a member of the Academy of Spinal Cord Injury Professionals (ASCIP) and the American Board of Physical Medicine and Rehabilitation (ABPMR). We wanted to share more about her background as well as some of the exciting new work she's conducting at Brooks.

#### YOU'RE LEADING A STUDY ON WHEELCHAIR MOBILITY FOR TETRAPLEGICS USING A NEW TECHNOLOGY - CAN YOU TELL US ABOUT IT?

#### YOU ALSO RUN BROOKS' DIAPHRAGMATIC PACER PROGRAM. TELL US ABOUT DIAPHRAGMATIC PACERS.

#### WHY DID YOU CHOOSE MEDICINE?

As an undergraduate, I was a chemical engineering major, with the idea of going into biomedical engineering, which was not a separate field of study at the time. Part of my coursework included biology and pharmacology, and I took anatomy as an elective. I found I wasn't that excited about engineering, but I knew I wanted to do something in the health field. I went on two medical mission trips to the Philippines and saw medicine being practiced firsthand. That helped me decide to take the plunge and make the commitment to medical school.

#### TELL US ABOUT YOUR EDUCATION.

My medical degree is from the University of Kansas School of Medicine. I did my residency training in Physical Medicine and Rehabilitation at the Rehabilitation Institute of Chicago, today known as the Shirley Ryan AbilityLab. I also completed a fellowship in Spinal Cord Injury Medicine at the University of Miami.

#### WHY DID YOU CHOOSE REHABILITATION MEDICINE?

Physical medicine and rehabilitation - or physiatry - was not that well known or promoted in medical school. What drew me to it was how integrated and collaborative it is. So many medical specialties and therapies come together to help a patient. With acute-care medicine, you're with a patient for



a short period of time. In rehabilitation, you can be with a patient for weeks, months and even years. You work with them to get to the best possible outcome, and you see them get better. At Brooks, we treat a huge spectrum of patients and complexity of issues. It's very challenging and rewarding.

The Multimodal Tongue Drive System (mTDS), developed by Dr. Maysam Ghovanloo, director of the Georgia Tech Bionics Lab, uses tongue and head movements and voice recognition to generate commands to accomplish tasks. We had previously studied mTDS for computer tasks like controlling the mouse, playing games and sending emails. The participants picked up the use of mTDS quickly and were very enthusiastic about it. This new research project, funded by a Brooks Collaborative Research Grant, will study participants' ability to use mTDS to control a power wheelchair.

People are familiar with pacemakers for hearts. Diaphragmatic pacers (DPs) work on a similar concept. Implanted electrodes stimulate the diaphragm to expand and contract. They were developed for SCI patients who were on long-term mechanical ventilation (MV). There are many negative effects with MV, such as high respiratory infection rates and poor mobility. The changeover, or weaning, from MV to DP addressed these negative effects. DPs provide an overall better quality of life. Our Diaphragmatic Pacer Program is growing because of our clinical partnership with UF Health Jacksonville and our research partnership with the University of Florida's College of Public Health & Health Professions. We've had some amazing results on weaning people from DPs to breathing independently, which has given rise to a new research study (see feature article, page 7).

#### **BROOKS REHABILITATION MEDICAL GROUP**

## Our Physicians



Mabel Caban, MD Staff Physiatrist



Meghan Cochrane, DO Staff Physiatrist



Medical Director

Rehabilitation Services at Bartram Crossing

Low Vision Optometrist

and Center Manager



Internal Medicine



Jantzen Fowler, MD Internal Medicine



Carolyn Geis, MD Medical Director Halifax Health | Brooks Rehabilitation Center for Inpatient Rehabilitation



Adria Johnson, MD Staff Physiatrist



Jorge Perez Lopez, MD Staff Physiatrist

Kerry Maher, MD

Vice President of PM&R Consulting and Physician Relations



Kenneth Ngo, MD Medical Director, Brain Injury Program, Associate Medical Director



Trevor Paris, MD Medical Director for Brooks Rehabilitation Hospital, Vice President of Brooks Rehabilitation Medical Group, Medical Director of University Crossing



Parag Shah, MD Medical Director, Stroke Program, Memorial Hospital Consultant Liaison Service



Keisha Smith, MD Staff Physiatrist



Sarala Srinivasa, MD Staff Physiatrist

THE BROOKS REHABILITATION MEDICAL GROUP CONSISTS OF 17 EMPLOYED PHYSICIANS, AND PRACTITIONERS, TO CARE FOR



# PARTNERING FOR BETTER PATIENT OUTCOMES

"IT'S IN OUR DNA"



Geneva Tonuzi, MD Medical Director, Brooks Spinal Cord Injury Program & Cybernic Treatment Center



Marla Trapp, MD Medical Director, Bartram Crossing, Family Medicine Physician



Howard Weiss, DO Medical Director. Pain Rehabilitation





## "

An overall goal of the Collaboration is to create a greater understanding and appreciation in the academic world of patient-oriented clinical research, while engaging and encouraging clinicians to think about their patients with scientific curiosity and to promote use of evidence in clinical practice.



#### BROOKS REHABILITATION HAS A LONG HISTORY OF PARTNERING WITH OTHER ORGANIZATIONS, RANGING FROM CLINICAL, RESEARCH AND ACADEMIC INSTITUTIONS TO NATIONAL NONPROFITS AND LOCAL COMMUNITY GROUPS.

For Doug Baer, Brooks Rehabilitation CEO, and Michael Spigel, President & COO, partnering means accomplishing more with and through others – with the sum of the whole ending up greater than the sum of the parts.

"Brooks has a partnership mentality," said Baer. "It's in our DNA. As the major provider of rehabilitation and other services in this region for all types of customers and providers, we're in a unique position. We've maintained our independence, allowing us to form partnerships and collaborations across a wide spectrum."

"We developed academic partnerships to both fulfill a need in the marketplace and a desire by all parties to have the best trained clinicians," said Spigel. These include the University of North Florida Brooks College of Health for nursing and physical therapy and the Jacksonville University Brooks Rehabilitation College of Healthcare Sciences for speechlanguage pathology and occupational therapy.

"Partnerships with Japan's Cyberdyne, Inc., and its Hybrid Assistive Limb (HAL) technology at the Brooks Cybernic Treatment Center, and The Green House<sup>®</sup> Residences (see page 18) and its new models of care at our Bartram campus both developed from our values of innovation and excellence," said Spigel.

"Brooks brings expertise, specialization, big data, a large patient pool, a continuum of care structure and a highly respected brand to our partners," said Baer. "We look for partners that understand and appreciate our mission, have a commitment to excellence and want win-win situations."

Baer and Spigel believe that the use of partnerships will increase in the coming years. They think the partnerships of the future will be more creative and innovative due to the changing business and reimbursement environment.

"Partnerships are hard work. We don't take them for granted and always look to grow and develop them," said Baer. "The ultimate goal of any of our partnerships is better outcomes for our patients."

#### THE BROOKS/UF-PHHP RESEARCH COLLABORATION

One of Brooks' main partnerships is with the University of Florida College of Public Health and Health Professions (UF-PHHP). Although the two organizations had been carrying on research activities together for years, a common vision to advance clinical rehabilitation led to the creation of a formal partnership – the Brooks/UF-PHHP Research Collaboration – in 2013. Merging the strengths of a major academic research institution with those of a comprehensive rehabilitation system serving a large, diverse patient population is a rare, but powerful, combination. The Collaboration, which has entered its seventh year, has generated more than 100 publications and \$4 million in grant funds.

The Brooks/UF-PHHP Research Collaboration, with Dr. Jason Beneciuk, PT, DPT, PhD, MPH, as interim director, has two main areas of focus: the Musculoskeletal Pain Research Program and the Neuromuscular Research Program. Along with Dr. Beneciuk, Drs. Joel Bialosky PT, PhD; Emily J. Fox, PT, DPT, PhD, NCS; and Dorian Rose, PT, PhD work with clinicians and multidisciplinary teams across Brooks and the UF-PHHP to conduct research. Overall, this unique partnership allows for innovative research to be both conducted and translated into clinical practice.

#### **RESEARCH-SCIENTIST SPOTLIGHT** EMILY J. FOX, PT, DPT, PHD, NCS

Emily J. Fox, PT, DPT, PhD, NCS, is a Research Assistant Professor in the Department of Physical Therapy at the University of Florida in Gainesville and Director of Neuromuscular Research and Director of the Brooks Motion Analysis Center for Brooks Rehabilitation in Jacksonville, Fla. In these roles, Dr. Fox leads the vision for Neuromuscular Research and oversees studies focusing on those who have experienced a spinal cord injury or stroke. She oversees the many contributors to the research studies and the numerous individuals touched by participation in research.

"Before the Collaboration, no one had ever held simultaneous positions like this at Brooks and UF," said Dr. Fox. "But we were empowered by leadership on both sides to make it work. An overall goal of the Collaboration is to create a greater understanding and appreciation in the academic world of patientoriented clinical research, while engaging and encouraging clinicians to think about their patients with scientific curiosity and to promote use of evidence in clinical practice."

Dr. Fox works to create a shared vision and cohesive environment between team members at both locations. "I got great advice early on that helped me shape what we're doing," said Dr. Fox. "It was: "I do one job.' I just happen to be employed by two institutions. And that one job is to lead impactful clinical research. I leverage the talent and resources at Brooks and the talent and resources at UF to do that job to the best of my ability."

Two of Dr. Fox's current studies focus on improving respiratory function – one through acute intermittent hypoxia, the other through diaphragmatic pacers. Both are novel interventions in research today.

ACUTE INTERMITTENT HYPOXIA BUILDING ON PRIOR RESEARCH LEADS TO A NEW CLINICAL STUDY

The Department of Defense (DoD) awarded Dr. Fox a \$2.4 million grant to study the effects of acute intermittent hypoxia (AIH) and respiratory strength training to enhance breathing in people with chronic spinal cord injury (SCI). Non-invasive and with little stress, AIH involves short episodes – less than a minute – of breathing low oxygen.

Dr. Fox explains that Gordon Mitchell, PhD, a preeminence professor of neuroscience at UF-PHHP and co-leader of the funded study, has been researching the beneficial effects of AIH for more than 20 years.

(Articles continues on pages 8-9)



Researchers study the effects of acute intermittent hypoxia and respiratory strength training.

Previous AIH research shows that breathing low oxygen triggers a process that leads the brain to release serotonin. Serotonin helps strengthen neural pathways, which connect one part of the nervous system to another, and specifically strengthens motor neurons, which are responsible for activating muscles. Recent research involving walking shows that the beneficial effects of low oxygen are greater when paired with rehabilitation activities.

"Impaired breathing function is a leading cause of illness and death after spinal cord injury," said Dr. Fox. "With the DoD-funded research, we will combine AIH with respiratory strength training – breathing rehab – to determine if that combination is better than either one of those by itself. The research also will help us test the effects of AIH alone, versus the benefits of strength training alone. We hope this will lead to more effective rehab strategies to improve breathing function and health in people with SCI."

The research study will take place at the Brooks Clinical Research Center. The process to get the grant was itself an example of the Brooks/UF-PHHP Collaboration. "The DoD issued a call for new spinal cord injury research. Dr. Mitchell gathered a team of us at UF to discuss what research would be impactful and what our grant application would be about," said Dr. Fox. "The 'a-ha' moment for me – in my role with Brooks – was making Brooks a key part of it. So, while the initial ideas and groundwork of the grant came from basic scientists at UF, the Brooks side answered things like how the study is going to roll out and work, what team members will participate, what patients will be seen, what will we be able to do - that is, making it all feasible. A lot of personnel and coleaders on the project are Brooks individuals – like Dr. Tonuzi (Geneva Tonuzi, MD, Medical Director at Brooks' Spinal Cord Injury (SCI) Program)."

#### **DIAPHRAGMATIC PACERS** CLINICAL RESULTS LEAD TO NEW RESEARCH

Diaphragmatic pacers (DPs) use implanted electrodes to stimulate the diaphragm, making it expand and contract. DPs were developed two decades ago for spinal cord injury (SCI) patients who were on long-term mechanical ventilation (MV). DPs offer a better quality of life, addressing the main problems of MV, such as reoccurring respiratory infections and lack of mobility. When University of Florida Health Jacksonville (UF Health Jacksonville), a 695-bed, not-for-profit academic health center and hospital, implants DPs, the patients are often sent to the Brooks Rehabilitation Diaphragmatic Pacer Program for respiratory rehabilitation and weening from the MV to the DP.

In SCI patients who must go on MV, the diaphragm atrophies quickly – there is a large drop-off in its functionality even after just a few days. MV lets the patient breathe but does nothing to prevent the atrophy. Brooks Rehabilitation handles SCI respiratory rehabilitation and the potential weaning from MV to breathing independently, but this window of opportunity can be very short because of the diaphragm atrophy.

Generally, a patient was on MV for some time before being considered for a DP; that is, long after the possibility of the patient being weaned from MV to breathing on their own was over. Around 2012, physicians at UF Health Jacksonville, first Dr. Raymond Onders and later Drs. Andrew Kerwin and Brian Yorkgitis, explored implanting DPs much sooner than was done historically, in order to promote weaning from MV to the DP earlier rather than later. This would mitigate or avoid the negative effects of MV for the patient. Brooks Rehabilitation Diaphragmatic Pacer Program was now seeing patients from UF Health for rehabilitation who now had DPs much earlier in their process.

"We provided our personnel specialized training for these types of DP patients and had some surprising results," said Geneva Tonuzi, MD, Medical Director at Brooks' Spinal Cord Injury (SCI) Program. "There were patients who regained enough respiratory function that they were able to be weaned off the DP to breathing on their own. Since 2012, 24 of 26 targeted patients have been successfully weaned off DPs to breathing independently. It is an amazing quality-oflife outcome for patients who might otherwise have been on mechanical ventilators long term. All other DP patients reported gains in respiratory strength, less breathlessness and stronger voice control as well." (See related article, "Q&A with Geneva Tonuzi, MD," on page 3.)

From the clinical results, Dr. Fox has theorized that the DPs' electrode stimulation – that expands and contracts the diaphragm – is helping to strengthen the nervous system



Clay Wauneka, PhD, and Christy Conroy, MSPT, use 3-D motion analysis to improve walking recovery.

as well as the muscle fibers that would have otherwise atrophied with MV. This has led to two new projects:

- Brooks and UF Health Jacksonville have developed

   and are continuously evaluating and updating
   a protocol to provide a standardized, step-wise
   progression of DP weaning so patients are sent home
   with the ability to breathe independently.
- Brooks and UF-PHHP have recently completed a two-year research study, funded by the Craig H. Neilsen Foundation, to formally test the hypothesis that DPs increase diaphragm activation and improve respiratory function. Dr. Fox indicates that data analysis is still underway, but outcomes appear encouraging and suggest that stimulation of the diaphragm may be beneficial for severely injured individuals.

"The diaphragmatic pacer project is a perfect example of the value of the Brooks/UF-PHHP Collaboration," said Dr. Fox. "Although it is a small program, it meets all the goals of our partnership. Clinicians and clinical programs are at the core of the work, patients are involved, and research is pushing new questions and ideas that we hope will lead to better outcomes. We're all very proud of it."



## "

Research is pushing new questions and ideas that we hope will lead to better outcomes. We're all very proud of it.

## Jared Hogg

#### Early Implanting of a Diaphragmatic Pacer – a Success Story

A collaborative

research initiative

between UF and

of the diaphragm

prevents atrophy,

and also weighs the

potential benefit of

early DP implantation.

Brooks is focused on

whether DP stimulation



Geneva Tonuzi, MD, and patient, Jared Hogg, after removal of his diaphragmatic pacer.

A year ago, in March 2018, Jared Hogg's life changed. A 17-yearold fitness and health fanatic. Jared was with friends at the beach when he dove headfirst into the ocean, hitting a sandbar. He was immediately paralyzed from the neck down with a severe spinal cord injury. The TraumaOne helicopter airlifted him to UF Health Jacksonville. "While he was in flight, his breathing started to be compromised," said Laura Hogg, Jared's mother.

"They got him to the ER in time to intubate him (insert a tube through the mouth and put on a mechanical ventilator to assist with breathing). If he had gone by ambulance, he wouldn't have made it. TraumaOne saved his life."

Four days later, after extensive surgeries, UF Health doctors removed the tube from Jared's mouth and performed a tracheostomy – a tube directly into his airway - for use with the mechanical ventilator (MV). At the same time, the doctors implanted a diaphragmatic pacer (DP). As explained in the previous article, MV assists a

patient in breathing, but does nothing to prevent atrophy of the diaphragm, which can happen very quickly. DPs, on the other hand, use implanted electrodes to stimulate the diaphragm, causing it to contract as it would normally during breathing. A collaborative research initiative between UF and Brooks is focused on whether DP stimulation of the diaphragm prevents atrophy, and also weighs the potential benefit of early DP implantation. Historically DPs were placed more than 90 days post injury. UF Health is at the forefront of implanting DPs as early as within the first week of injury.

"Jared was one of the first patients to have a DP put in proactively to keep the diaphragm moving," said Mrs. Hogg. "Jared stayed on the vent for a solid two weeks. They began the weaning process from the MV to the DP, but he had a setback due to a punctured lung. It took another week, but then Jared was completely off the vent and solely using the DP. This was about four weeks after his accident."

Jared then came to Brooks. Along with his other therapies, he received respiratory therapy and began the weaning process to come off the DP. "They would turn the DP off for increasing amounts of time," said Mrs. Hogg. "As a mother it was scary for me at first. But then you could see his progress, and I thought, 'he's got this.'"

Jared's DP weaning progress was impressive, if not surprising, to everyone involved. Kendra Milliron is a respiratory care practitioner (RCP) and certified respiratory therapist (CRT) and serves as the Respiratory Services Manager at Brooks Rehabilitation Hospital. "DP weaning is relatively new methodology, as it goes hand-in-hand with early implantation and proactive treatment," said Milliron. "The Brooks' model was built as a collaborative effort that includes daily huddles between all caregivers - physicians, nurses and various therapists - to ensure that a patient is ready to progress to the next step or address any concerns immediately. Being our voungest DP patient to date, the Respiratory Therapy team was excited to

> see Jared's progress. He became more and more confident in his own body's ability to breathe. Between his young, healthy lungs and his drive to get better, Jared successfully weaned from DP support in less than two weeks.'

"The respiratory therapists were amazing and very attentive. They kept us abreast of everything going on. You could see Jared was just ready to get off the DP and move ahead," said Mrs. Hogg. By the beginning of May, just about six weeks from the date of his accident, Jared was breathing on his own.

"As a respiratory therapist for more than 28 years, it is stories like Jared's that continue to inspire me," said Milliron. "I am proud to be part of an organization that always asks, 'How can we do this?' Brooks embraces collaborations and new technology while always maintaining its commitment to people and quality."

"It got to the point that I was breathing over the DP, and I had to stop myself from breathing to get back in sync. So, I wasn't nervous at all coming off the DP," said Jared. "Dr. Hamdani (Irram Hamdani, MD, the managing pulmonologist for all of the Brooks DP patients), came to me and told me, 'Your diaphragm is not paralyzed anymore.' I said, 'I like the way you said that!'"

On the morning of Oct. 1, 2013, Sara Beth Gerard left for work as usual. She never arrived at the high school where she was an English and Drama teacher. A head-on crash sent her unconscious to the ER with multiple injuries.

Her family was told she was in an accident but it was hours before they would hear her condition or know if she would survive. She suffered a severe traumatic brain injury, punctured lung and multiple broken bones. Although Sara Beth gained strength and physical abilities day by day, she lost all memory of the last five years of her life. She needed comprehensive rehabilitation.

After multiple surgeries and several weeks at an inpatient facility, Sara Beth came to the Brooks Neuro Rehabilitation Day Treatment Program. This program helps to ease the transition from acute care or inpatient rehabilitation to home. It was created to help patients improve cognitive/thinking, communication ability, social skills and emotional stability, all while regaining physical abilities.

During her initial evaluation for the program, Sara Beth was asked about her goals. Ever the performer, she said she wanted to be able to do a split again and wear high heels (but not at the same time). Her care team learned she was an actress and singer and began to help her regain her performance skills. They started teaching her skills to memorize her lines. Her speech therapist helped her with her breathing so she could sing again. They encouraged her to audition for a new show and surprised her by coming to see her perform.

Sara Beth also returned to teaching. It was going well until she had a seizure. Doctors said it was likely cause by the brain injury and stress. They tried multiple medications but the seizures continued. Her school was incredibly understanding and even taught her students what to do if she had another seizure in class. However, after two seizures in one day, Sara Beth took a leave of absence. During that time, she volunteered with the Neuro Rehab Day Treatment Program. She loved helping other brain injury survivors. One of her favorite mantras while she recovered was "It could always be worse," and that same positive attitude helped inspire others. She enjoyed cooking meals for them and sharing wisdom only someone who has been in their shoes could understand.

When a rehab tech position opened in the program, Sara Beth applied and was hired in May 2018. She is so comfortable in her new position that she no longer suffers from seizures. According to her co-workers, Sara Beth does an extraordinary job to make patients feel at ease with her caring, kind, creative and lively spirit. Her journey has truly come full circle now as an employee of the program that assisted her through her own exceptional recovery.

#### **EMPLOYEES WHO MAKE A DIFFERENCE** Sara Beth Gerard



#### **REHAB CHAMPION**

Sara Beth was recently awarded the Brooks Rehabilitation "Rehab Champion" Award. To select a winner, employees nominate a former Brooks patient who has met the challenges of physical rehabilitation and whose courage and tenacity has been a source of inspiration to others. He or she demonstrates care and concern by giving support to someone who may be facing similar trials, through sharing their experiences in overcoming both physical and emotional challenges. Sara Beth is the epitome of a rehab champion.

## HOW WE MAKE an

The Brooks Health Foundation supports the mission of Brooks Rehabilitation by investing in community activities that prevent disabilities and meet the needs for persons living with a differing ability. Through research, education, charity care and community-based programming, the Brooks Health Foundation facilitates positive change in our community so that recovery after a traumatic injury or illness is possible.

Thanks to our community partners and the generosity of others, we provide world-class rehabilitative care in a variety of care settings.

We provide charity care to the uninsured/underinsured in our community, and meet the growing physical, social and mental health needs of those living with disabilities.

BrooksRehab.org/donate

BEYOND SPRING 2019

#### PEDIATRIC RECREATION



A free program that provides a safe and supportive environment for youth with physical and/or developmental disabilities so they can engage in recreational activities with their peers.

**212** Individuals Served

#### RESEARCH



The Brooks Clinical Research Center is devoted to conducting innovative research studies that will expand the knowledge and science of recovery. Our skilled team integrates the latest research discoveries into clinical practices that improve patient outcomes and quality of life.

**134** Individuals Served

#### SCHOOL RE-ENTRY



Maximizes a child's successful transition back to school following a disabling illness or injury. The program includes education for classmates, school professionals and families to help them understand the challenges and needs of a student transitioning back to school.

**137** Individuals Served

#### ADAPTIVE SPORTS AND RECREATION



One of the most comprehensive adaptive sports programs in the country, providing fun and fitness for individuals living with physical disabilities.

**570** Individuals Served









#### **BROOKS CLUBHOUSE**

A day program that provides a bridge between medical rehabilitation and successful community and voca-tional reintegration for individuals with an acquired brain injury.

68 Individuals Served

#### **BROOKS APHASIA CENTER**

Offering both a community (social language group) and a six-week Intensive Comprehensive Aphasia Program (ICAP).

#### **63** Individuals Served

#### NEURO RECOVERY CENTERS

The Neuro Recovery Centers offer specialized equipment for customized rehabilitation during both formal therapy and after traditional therapy has been completed. These unique gyms allow individuals with disabilities to continue ongoing exercise and conditioning to maintain and improve functional movement and abilities.

#### **99** Individuals Served

MORE THAN 1,400 individuals **benefited** FROM OUR COMMUNITY PROGRAMS IN 2018



## Brooks Rehabilitation

### BROOKS BY THE NUMBERS: OVER 50,000 PATIENTS SERVED ANNUALLY



**18 employed** physicians, along with physician assistants and advanced nurse practitioners, to care for our patients in all settings.

**38 clinics** and growing; serving **35,000+** patients annually. **386,000+** patient visits annually.

Specialty clinics include sports therapy, balance, amputee, concussion, low vision, motion analysis, pediatrics, pain rehabilitation and brain injury and spinal cord injury day treatment.

61-unit assisted living community.

Two **12-unit memory care homes** that follow THE GREEN HOUSE<sup>®</sup> model of care for individuals with Alzheimer's and other dementias.

#### **REHABILITATION RESEARCH** Current Studies



#### **BRAIN INJURY**

EyeStim Study: This study evaluates a non-invasive means of improving eyelid opening and closing by applying a previously demonstrated safe and effective neuromuscular electrical stimulation (NMES) intervention to the muscles controlling eyelid movement.

#### SPINAL CORD INJURY

**RoAR Cyberdyne Study:** In partnership with the Brooks-Cybernic Treatment Center, the purpose of this study is to examine the safety and efficacy of locomotor training using adaptive robotics in adults with chronic spinal cord injury.

FLO2 Study: This \$4.2 million study, funded by the Department of Defense, will examine if the use of acute intermittent hypoxia and respiratory strength training improves breathing function after spinal cord injury.

**ENERGIZE Study:** This study will examine if transcutaneous spinal direct current stimulation, applied during 16 sessions of locomotor training, will improve muscle activation, lower limb kinematics, and functional walking outcomes in adults with chronic spinal cord injury.

**ABS Study:** This study will test the hypothesis that a single session of acute intermittent hypoxia will increase strength and activation of the trunk muscles that control respiration and posture, leading to improved scores on functional assessments. Our long term goal is to better understand the therapeutic potential of acute intermittent hypoxia combined with physical rehabilitation for individuals with SCI.

#### **CHRONIC PAIN**

**Online Tele-Rehab Program:** The primary purpose of this study is to compare the use of an online tele-rehabilitation platform versus a standard prerecorded DVD in supporting the sustainability of outcomes achieved during a comprehensive multidisciplinary pain rehabilitation program.

#### STROKE

Backwards Locomotion after Stroke Study: This research study examines the effects of a backward walking training program on balance, walking and the occurrence of falls after stroke.

Vagus Nerve Stimulation (Stet) Study: The MicroTransponder Paired VNS System is intended to be used to simultaneously stimulate the vagus nerve during rehabilitation movements in order to reduce upper extremity (arm) motor deficits associated with ischemic stroke. This study is in partnership with Mavo Clinic.

#### LOW BACK PAIN

Low Back Pain - Neural Processing Study: This study will provide a better understanding of the neural mechanisms of low back pain and how these factors interact to impact function.

Patient Expectations Study: This study examines the levels of patient and provider expectations regarding physical therapy interventions for low back pain over an episode of care. The study also hopes to determine the preference for involvement in the clinical decision making process of patients reporting to physical therapy for low back pain.

#### **OTHER ORTHOPEDIC CONDITIONS**

Health System Implementation of Clinical Practice Guidelines for Neck and Low Back Pain in Outpatient Physical Therapy Settings Study: This study addresses a critical barrier to the progression of physical therapy management for spine related musculoskeletal pain by evaluating a multifaceted intervention for clinical practice guidelines implementation. The study also aims to identify barriers and facilitators for sustained implementation during routine clinical practice.

#### ADDITIONAL RESEARCH

Residency Inter-professional Education: A Pilot Study: This study will assess learners' reactions to a pilot inter-professional education program for family medicine and physical therapy residents, as well as explore the impact on learners' knowledge and perceptions of each profession and beliefs about collaborative practice.

Virtual Reality Study: To determine the feasibility and potential benefit of using a virtual tele-therapy system to deliver exercises to individuals with lower limb impairments due to a history of lower limb injury or surgery.

#### Partnering with National Experts for Education: THE BROOKS INSTITUTE OF HIGHER LEARNING

The Brooks Institute of Higher Learning (IHL) is responsible for professional development of all clinicians who practice within the Brooks Rehabilitation system of care. The Brooks IHL faculty consists of both nationally renowned experts from around the country, as well as nationally recognized clinical experts that currently practice at Brooks Rehabilitation. These partnerships with other experts in the field lead to the most well-rounded training available.

The Brooks IHL offers four primary programs: residency/ fellowship; continuing education; clinical student internship; and other special series. Since its inception in 2006, 147 residents have graduated from our residency/fellowship program. Individuals have come from across the US, as well as abroad, for the professional development opportunities we provide. The multiple specialty areas of physical therapy practice include:

- This program also has an occupational therapist neurologic fellowship and an orthopaedic manual physical therapist in July 2019, which will provide educational training for

This innovative residency will work in collaboration with the other IHL residencies to provide opportunities for interdisciplinary education.

Two initiatives within our special series are the Physical Therapist Assistant (PTA) Advanced Proficiency program and the Brooks Advanced Practice Series (BAPS).

• The Brooks IHL PTA Advanced Proficiency program prepares PTAs to submit a portfolio to the American Physical Therapy Association (APTA). The APTA will recognize these individuals as having advanced proficiency within a specialty area of physical therapy practice. This program is open and available to PTAs both within and outside of Brooks.

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• BAPS is made up of "lunch and learn" presentations held from noon to 1 p.m. on about 30 Thursdays throughout the year. The presentations are geared towards a multidisciplinary healthcare audience and provide cutting-edge information to help clinicians from all disciplines function and navigate in the health care space. BAPS is available to clinicians and facilities outside of Brooks for a modest fee.

Each of our IHL programs educates and provides professional development to clinicians and students, helping them acquire advanced knowledge and skills. This ultimately improves their ability to provide quality care to the patients they serve.

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#### SPOTLIGHT

## The Green House<sup>®</sup> Residences

#### Partnering For a Completely Different Care Model



A Green House Shabaz talks with an Elder about current events.

Staying true to our partnership mentality and value of innovation, we researched the most customer-centric and effective care models in memory care and aging services. We discovered THE GREEN HOUSE® Project, a nationally-

recognized model that has pioneered the creation of intimate, residential style homes where residents enjoy specialized care and an excellent quality of life.

Instead of a traditional facility, The Green House model calls for a home for 10 to 12 people, with private rooms and baths, an open kitchen, great room and easy (but secure and safe) access to the outdoors. The goal is to create a real home that harmonizes with its surroundings. Even the terminology used reflects the change in how care is provided. Those living at the Green House are not called patients or residents, but are "Elders." Green Houses are not run by managers, but "Guides." The certified nursing assistants (CNAs) who are the primary caregivers are each called a "Shahbaz," referencing a Persian fable of a great guardian of the people.

The Green House model can be applied to memory care as well as other care needs, like assisted living and veterans' homes. The Green House Project calls their model "the most radical, yet common-sense solution you'll ever experience."

"They become our friends and part of

our family, part of our hearts. I listen to them. I hold their hands when they cry and I cheer with them when they accomplish something they have been working on. I am blessed to help them live the fullest lives they can."

- Brooks Shabaz

Brooks partnered with Green House consultants to create two memory care homes at our Bartram campus. "In so many cultures around the world, elders are respected and revered." said Andrew Hawthorne, Green House Guide for Brooks' Aging Services. "That's the environment we've created at our Green Houses."

The GREEN HOUSE® Residences at Brooks Rehabilitation are freestanding communal homes, each with state-of-the-art amenities and 7,000 square feet of living space. They are uniquely designed to provide seniors with Alzheimer's and dementia the specialized care they need, while offering the privacy and warmth of a nurturing community.

It starts with the floorplan, with the open kitchen and great room. "The plan centers on the concept of the 'hearth,' a

center area where cooking, gathering and eating takes place," said Hawthorne. "Unlike other facilities, where residents may be waiting their turn to be fed alone in their rooms, our Elders come together to eat at a dining room table, and eat with the Shahbazim (plural of Shahbaz) who have prepared the meal for them. It's the same idea as a family sitting down at the dinner table."

Three Shahbazim and a nurse assist the 12 Elders, making for a low 4 to 1 caregiver ratio during peak times. In addition, the role of the Shahbazim goes beyond that of traditional nursing assistants. "Shahbazim work in selfmanaged teams," said Hawthorne. "As a Guide, I provide support and accountability. A Shahbaz's duties are fluid and are dependent upon what is needed. Like a family, they get to know our Elders - their likes and dislikes, routines, what makes them happy, what makes them anxious. Shahbazim become invested in the success of the Green House and their relationships with the Elders."

As one Brooks' Shahbaz said, "People often ask me exactly what I do. The easiest way to describe it is I am like a house parent. I take care of our Elders and try to meet their needs the way a parent would. I cook, I clean, and I do laundry. I order supplies. I schedule outings and go with them to doctors' appointments. I enjoy getting to know them and learning what their lives were like before they came to us. They become our friends and part of our family, part of our hearts. I listen to them. I hold their hands when they cry and I cheer with them when they accomplish something they have been working on. I am blessed to help them live the fullest lives they can."

Hawthorne stresses that, especially for those with Alzheimer's and dementia, a familiar home environment and personalized care reduces anxiety and makes for better outcomes. "Our Elders set their own routines and have choices regarding their activities and what they eat."

Hawthorne adds that our Elders with Alzheimer's and dementia may not be able to readily communicate their needs, and it is up to the Shahbazim to go the extra mile for understanding. "For example, one Elder was anxious and trying to open the front door," said Hawthorne. "A traditional caregiver may assume she was trying to leave the facility and would get her away from the door, maybe even sedate her. Our Shahbaz, on the other hand, worked with her to understand what her anxiety was about. Our Shahbaz determined that the Elder really just wanted to go outside for a while. The Shahbaz assisted her on a short walk on our secure grounds, and the Elder was content and happy the rest of the day. The short walks are now part of her routine, and there are no signs of anxiety."

32 states.

Brooks Rehabilitation was the first organization to bring the Green House model to Florida. The Green House Project now has more than 200 homes open or in development in

The Green House® Residences are located at 6209 Brooks Bartram Dr., Bldgs. 300 & 400, Jacksonville, FL 32258. Call (855) 306-3387 (toll free) or visit bartramlakes.org/ memory-care for more information.





#### PATIENT HIGHLIGHT

## Jolie Rose Lombardo



#### New Spinal Cord Day Program Helps Ballerina Get Back on Her Toes

In 2018, at only 14 years old, Jolie Rose Lombardo earned first place in the Youth America Grand Prix (YAGP). YAGP is the world's largest non-profit international student ballet competition and scholarship program, with over 10,000 aspiring ballet dancers competing for that top spot in their division every year. Jolie Rose's gold medal performance in 2018 made her the best in the world in her age group. Six months later, she was recovering from surgery on her spine and unable to move.

Jolie started dancing when she was 3 years old. At 10, she began her concentration in ballet. When she competed in 2018, it was her fourth attempt that finally won her the gold medal at YAGP. Also in 2018, she was honored to be a finalist at USA/IBC International Ballet Competition. With the competing age group of 14 – 23, Jolie Rose was the youngest competitor. The USA/IBC is like the Olympics of ballet held only every four years in the United States.

With her win at the YAGP, Jolie was awarded a full scholarship with room and board from Mr. Tedeusz Matacz, Director of the John Cranko Schule, in Stuttgart, Germany. It was a dream come true.

While in Germany, Jolie was dancing over 28 hours a week. For three nights in a row, Jolie woke up with shooting pain from

her back down her leg. "Ballet dancers are always in pain. We thought she pinched a nerve in her back from all the bending in half that she does. It sounded like sciatica to me," said Jolie's mom, Stephanie Lombardo. After the third night of no sleep, Jolie told the school, and they sent her to a doctor. The MRI showed a tumor on her spinal cord. Her surgeon explained that the tumor had finally grown big enough that when she would fully relax, it would touch her sciatic nerve. "If it hadn't touched her nerve, we'd never have known it was there until she was paralyzed," said Mrs. Lombardo.



Jolie competing in the USA/IBC in 2018. Photo © USA/IBC



Jolie was immediately flown from Germany to Scottish Rite Hospital in Atlanta for surgery by Pediatric Neurosurgeon, Dr. William R. Boydston. The chances of her being paralyzed were very high. Dr. Boydston wasn't sure of her prognosis until he went in for the surgery. He couldn't see space between her tumor and spinal cord, which meant that they may be fused.

After many hours in surgery, Jolie's first words as she woke up were, "I love ballet." Luckily, the tumor and spinal cord were not fused and they were able to remove the Schwannoma tumor, which was benign.

Jolie spent eight days in the hospital with three full days on her stomach. For those three days, she was unable to move her limbs or head. All she did was cry and watch ballet videos.

Scottish Rite had an outpatient full-day program, that they were told was the only one in the country. The family wanted to bring Jolie home for rehab and couldn't believe a city the size of Jacksonville could not offer the same care. At this time Jolie was walking with a walker, but her back would seize up and cause incredible pain. As any parent would, Mrs. Lombardo wanted to find help for her daughter. "I had heard amazing things about Brooks Rehabilitation so I decided to call and ask if they had anything like this program they had in Atlanta," said Mrs. Lombardo. The timing was perfect.

Brooks recently created the Spinal Cord Injury (SCI)/ Disorders Day Treatment Program after identifying a gap in service delivery between current inpatient and outpatient SCI care programs. SCI patients in the Day Treatment Program receive physical, occupational and speech therapies, both individually and in groups, for up to six hours a day, five days a week, for six to 12 weeks. A psychologist is also available. The goals of the program are to have patients smoothly transition back into their community, manage their ongoing medical needs and get to the next level of care. Jolie became the first patient in the program. Lauren Kaminske, PT, DPT, was Jolie's primary therapist and spent the majority of the day with her.

When Jolie first started, her primary limitations were significantly limited muscular endurance, impaired balance, along with very guarded gross movements. She also had

"We started with the basics: teaching her to properly engage her core, strengthening her hips, calves, and feet, and also performing nerve glides to increase her range of motion with less pain shooting down her leg," said Dr. Kaminske. "Then we progressed to muscle endurance activities and prolonged stretching to get her back to her 'normal' extent of range of motion. We also challenged her with high level balance activities on the BOSU ball and in pointe shoes. And, finally, we began incorporating dance-specific activities like jumping, turns and across the floor exercises."

"I don't think Jolie could have had the improvement she did if she wasn't in this type of an intensive program," said Mrs. Lombardo. Jolie Rose would like to thank her new family at Brooks for helping her continue on her quest of a long and happy career in ballet.

"When I see her walk through the door it's hard to imagine the first day I met her was only eight weeks ago. She is such a hard-working and dedicated individual, and I think that really had a positive impact on her very rapid physical progress," said Dr. Kaminske.

spinal precautions which limited her "normal" ways of getting out of bed, picking up objects from the floor, etc., but she would also move very slowly in order to avoid any increased pain at her surgical site.

Jolie was in the program for five weeks and is now attending dance classes regularly. She continues outpatient physical therapy and is planning on returning to John Cranko Schule at the end of April at full strength.



Dr. Kaminske works with Jolie to incorporate dance-specific activities into her therapy.





In the Fall 2018 issue of "Brooks Rehabilitation Beyond," we detailed our recent partnership with Japanese medical innovation company Cyberdyne, to bring Hybrid Assistive Limb (HAL) technology to the U.S. The Brooks Cybernic Treatment Center was the first facility in the U.S. offering the innovative, landmark treatment to individuals with spinal cord injuries.

When the brain / muscle connection is disrupted because of a spinal cord injury, the HAL exoskeleton detects any faint bioelectric signals between the brain and the skin surface above the muscles, and converts that signal into muscle movement. HAL is the world's first advanced robotic treatment device shown to improve a patient's ability to walk.

Almost eight years ago, Chris Howell was in a terrible car crash, leaving him unable to move from his chest down after breaking his C5 vertebrae. He transferred from central Florida to Jacksonville to begin rehabilitation at Brooks. Chris and his mom intended to stay for five weeks of inpatient therapy that turned in Chris moving to Jacksonville. His commitment to his outpatient rehabilitation, positive attitude and mentoring of new patients led to a job offer. Chris has been a Brooks employee for a little more than five years, and currently helps run Brooks' wheelchair clinic. Despite his rehabilitation efforts, Chris remained mainly wheelchair bound, walking only short distances with equipment in controlled situations.

As a Brooks employee, Chris was aware that HAL technology was coming. Bob McIver, PT, DPT, NCS, director of Brook's Clinical Technology and Wellness Programming, approached Chris about being a Cyberdyne candidate. Chris tried other exoskeleton-type equipment at Brooks that hadn't provided significant improvements. "I really didn't have any expectations, since it had been eight years since my accident," said Howell. "But I always have a goal to get better. I was willing to try it and see what would happen."

Since Chris already had some movement in his legs and a little bit of control with his steps, he and his therapists used the HAL bio-electric signal connection to focus more on his gait mechanics, timing and endurance. The HAL protocol is intense, calling for 60, Monday through Friday sessions of 60 minutes each. "Day to day, it was hard for me to tell the progress," said Howell. "There would be good days and bad days. But overall the progress was easy to see, especially with the testing we did." Twice a week, before the HAL treatments, Chris and his therapists would do a 10-meter walking test, using a walker. At the beginning, it took Chris five minutes to go 10 meters. At the end of his 60 sessions, his best time was 36 seconds.

"Before HAL, I could use a walker but it wasn't anything practical," said Howell. "I couldn't do it on my own. I had to have someone right there with me. Now, it's easier to stand up on my own with the walker. I'm gaining more confidence on getting around with a walker on my own, in real-life situations, instead of just at therapy." Chris uses the gym at one of Brooks' Neuro Recovery Centers to continue working on his walking, focusing on doing something every day.

Chris was nominated to receive funding for his Cyberdyne treatment from the JT Townsend Foundation, whose mission is to help those living with disabilities through financial assistance for equipment and services. The Foundation, which has helped many Brooks patients, had already connected with Brooks when it heard about Cyberdyne. "I was awarded the majority of the funding through the JT Townsend Foundation. I'm very grateful for their support," said Chris.

After eight years, Chris found new hope. "There's nothing else like HAL out there. It's so new and different," said Chris. "Hopefully I can see other people go through it, and mentor them based on my experiences. Without HAL therapy, I wouldn't be where I'm at right now."



#### Saturday, May 11, 2019

This year we Par-Tee like a Rockstar at Topgolf Jacksonville. This annual fundraiser benefits Brooks Adaptive Sports and Recreation, a community program that serves more than 650 unique participants each year who have experienced a traumatic injury or illness in our community. The program offers 15 weekly activities and two monthly special events year-round. Please help us continue to increase the quality of life of our participants through fitness, fun and friendship by participating in this exciting event. For more information and event photos, please visit thepartee.org.

#### **AMRPA Regional Meeting Series at Brooks Rehabilitation Hospital**

Friday, June 14, 2019

The American Medical Rehabilitation Providers Association (AMRPA) is reinstituting their Regional Meeting Series, providing an opportunity to hear directly from AMRPA leadership and engage with industry experts at a very affordable rate in between their two annual conferences. The meeting program will offer continuing education, and provide updates on AMRPA legislative, regulatory and operational issues. Brooks CEU presentations include:

- Mindi Manes, PhD
- Term Recovery Michael Spigel, MHA, PT

#### For more information, please visit:

amrpa.org/Education/Events/2019-Regional-Meeting-Series/Jacksonville-Florida

#### 36<sup>th</sup> Annual Brooks Rehabilitation Golf Classic Friday, Oct. 25, 2019

The Brooks Rehabilitation Golf Classic has been a staple of the Northeast Florida community for the past 36 years. Over 150 executives and community leaders come together at Deerwood Country Club every fall to support the programs and services of Brooks Rehabilitation. Rehabilitation is the key to regaining independence following a traumatic accident, stroke, or debilitating illness. We are here to empower people to achieve their highest level of recovery. Through participation in the tournament on Friday, Oct. 25, 2019, you can help us further this mission. For information about sponsorship opportunities and the event. please contact Jessica S. Cummings, Executive Director of Community Health at (904) 345-7481.

**UPCOMING EVENTS** 

## Save the Date

#### Par-Tee like a Rockstar for Brooks Adaptive Sports and Recreation

• Emerging Technologies in Rehabilitation - Robert McIver, PT, DPT, NCS

• Beyond the Walls of the Rehabilitation Hospital: Advocating for the IRF Level of Care in the Community - Kerry Maher, MD & Bryan Murphy, MHA, CRRN

From Data to Insight: Demystifying Analytics to Enhance Rehab Delivery -

• Beyond Rehab: The Role of Community Based Programs in a Patient's Long-

#### **EVENT HIGHLIGHT**

## Brooks Rehabilitation Goes Viral



Shaquem Griffin, Seattle Seahawks linebacker, poses with 1-year-old fan, Joseph Tidd.

On Feb. 9. Brooks Rehabilitation hosted Celebrate Independence at Daily's Place at TIAA Bank Field in Jacksonville, Fla. Since 1990, this free community event has featured inspiring individuals, family activities, exciting demonstrations and valuable information - all in the name of living life to its fullest.

This year, our quest was Seattle Seahawks linebacker. Shaquem Griffin. Shaquem Griffin was born with amniotic band syndrome leaving his left hand severely damaged. Due to the extreme pain caused by his birth defect, he had his left hand amputated at the age of four. Shaquem went on to become the first player in the NFL with one hand when he was drafted by the Seattle Seahawks in the 5th round of the 2018 NFL Draft.

We knew it would be a special day but could not have imagined the impact it would have on those who attended, and those around the world. Some of the most inspiring moments happened before the main program began. Fans donated to attend a special "Meet and Greet" with Shaquem himself. The proceeds will go toward the St. Pete Nitro Track

Club, a track and field club in St. Petersburg, Fla., that he and his brother Shaquill founded in their hometown.

During the meet and greet, fans of all ages and abilities were able to visit with their hero. Shepard Reavis, 7-years-old, was too excited to sleep the night before. Shepherd was also born with amniotic band syndrome affecting the same arm as Shaquem. He nervously gifted his idol a football with his handprints and a message that read, "Thank you for being a great example! Your biggest fan ... Shepherd." When asked what he thought of meeting Shaquem, Shepherd said, "He's my best friend."

The Tidd family was equally excited to meet Shaquem. Their 1-year-old son Joseph has no left hand, and they too looked at Shaquem's success as an inspiration. Video of their meeting has gone viral and was featured on NBC Nightly News, People, the Today Show, Yahoo Sports, SB Nation and the Seattle Seahawks website, and other outlets. The Tidds even had their own news crew following them to the event from their hometown.





Thank you to everyone who attended and volunteered at this inspiring event. A special thanks to Brent Martineau from Action Sports Jax for hosting the conversation with Shaquem Griffin on stage.



Miles Tidd, Joseph's dad, said, "Thank you again for the amazing day today. Everyone in the meet and greet to the flex field staff were great. We had a blast, and we will remember this experience for a long time. From the Tidd family to the Brooks family, 'Thank you!''

- We'd also like to thank our exhibitors for their informative and interactive demonstrations:
- Brooks Adaptive Sports and Recreation
- Brooks Center for Sports Therapy
- Brooks Concussion Program
- Brooks Pediatric Rehabilitation
- Hanger Prosthetics
- Jacksonville Sports Medicine Program
- Think First
- UF Health Jacksonville TraumaOne
- YMCA

We could not have created such an inspirational and educational event without our partners!



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