

**BROOKS®**  
Rehabilitation

# BEYOND



**FIGHTING A  
NEW OPPONENT:  
BRAIN INJURY**

FALL  
**2019**





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INSTITUTE FOR  
HIGHER LEARNING

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# Doug Baer



*Doug Baer and Michael Sellars celebrate at the finish line of the Brooks Rehabilitation Challenge Mile.*

“People like Michael motivate us to relentlessly pursue enhancements and additions to our system of care so we may go Beyond and achieve the best outcomes and quality of life for those we serve.”

To achieve the best outcomes for patients who have suffered a major injury or illness requires expertise, focus and a dedicated team working across multiple settings of care. The system of care that we have developed at Brooks to treat people who have suffered a brain injury and other complex neurological conditions is ideal for facilitating recovery.

How was the system of care developed? What makes it unique? Recruiting outstanding program leaders like Dr. Ken Ngo, Medical Director of the brain Injury program, is essential. Recognizing that the recovery process for conditions like a brain injury requires treatment over an extended period of time, in various levels of care, necessitates innovative thinking. To achieve this goal at Brooks, we turn to the people who are most creative at finding solutions...our team members. As an example, Kathy Martin, a cognitive therapist and Brain Injury Clubhouse manager, recognized the need for brain injury survivors to stay engaged after discharge, so she championed the idea of a Brain Injury Clubhouse, one of only a handful in the country. Alice Krauss, occupational therapist and manager of Brooks Adaptive Sports and Recreation, followed the same path to champion and develop one of the leading adaptive sports and recreation programs.

Brooks has a formal initiative to harness our teams' ideas called Crowdsourcing. This program entails gathering ideas on how to improve our programs and settings from our employees in a competitive format. Ideas are presented and voted on by our entire management team. Examples of past ideas that have been implemented include an Aphasia Center, Spinal Cord Day Treatment Program, Brooks Rehabilitation Alternative Voices (BRAV) Program and Helen's House, our family housing center, to name a few. As you can tell, the development of our system of care has been a team effort over many years.

The depth and breadth of our services for complex issues like a brain injury makes our system of care unique and unmatched by anyone else in the world. Why is this so important? Because this system helps people like Michael Sellars and his family get their lives back. Michael's story is personal for me since I have known his father for over 30 years when we worked together at a previous employer. Michael suffered a significant brain injury in a car accident on Feb. 23, 2009. To see how far Michael has progressed and how he continues to improve on a daily basis and take advantage of all the services we offer is inspiring. Over these 10 years, Michael and his family have become a part of our Brooks family. People like Michael motivate us to relentlessly pursue enhancements and additions to our system of care so we may go Beyond and achieve the best outcomes and quality of life for those we serve.

*Doug H. Baer*

# Q&A

## Kenneth Ngo, MD

Kenneth Ngo, MD, joined Brooks Rehabilitation in 2010 and currently serves as Medical Director of the Brain Injury Program and Associate Medical Director of Brooks Rehabilitation Hospital. He is board certified in Physical Medicine & Rehabilitation, with a subspecialty board certification in Brain Injury Medicine. Dr. Ngo is also on the board of directors for ThinkFirst, a national foundation whose mission is to prevent brain, spinal cord and other traumatic injuries through education, research and advocacy. We wanted to learn more about Dr. Ngo's background and the brain injury rehabilitation programs and treatments that Brooks offers.

### TELL US ABOUT YOUR MEDICAL EDUCATION.

I received my medical degree from the University of Wisconsin School of Medicine and Public Health, completed my internship at Michigan State University and residency at the Medical College of Wisconsin.

### WE UNDERSTAND THAT YOUR BACHELOR'S DEGREE IS IN BIOMECHANICAL ENGINEERING. HOW DID THAT LEAD YOU TO MEDICAL SCHOOL?

Becoming a physician was in my mind, although I didn't solidify the decision until later in college. I decided to study engineering because I loved science and math. I enjoyed the challenge of working on and figuring out problems. I decided on medical school for a couple of reasons. There is an idealistic view of medicine – you can have a direct and immediate impact on patients and their quality of life. With engineering, the results and impact seemed far removed to me, at least at the time. Another was the idea of advancing medicine using technology – that was intriguing to me. Looking back, I believe that having a background in engineering provided me with a solid foundation for excellent problem-solving skills and teamwork required for the practice of rehabilitation medicine.

### WHY DID YOU CHOOSE REHABILITATION MEDICINE?

I was open to different specialties during medical school. I was drawn to the human aspect of medicine – sitting with

patients, talking to them about their lives, what they like to do and figuring out how I can impact the quality of their lives. At one point, I thought I wanted to be an orthopedic surgeon, which seemed logical after engineering, but found out I did not enjoy the operating room. I do, however, enjoy talking to patients and helping them find ways to do the things they love to do, even if it's in a different way than before. That's what rehabilitation medicine really is – restoring function and helping patients live fulfilling lives with joy and dignity, albeit with cognitive and/or functional impairments.

### THEN WHY SPECIFICALLY NEURO/BRAIN INJURY REHABILITATION?

The brain is a fascinating organ. I feel the brain is the last frontier of medicine that needs to be further explored and understood. That's the challenge – understanding brain function, behaviors and how we think, how we carry ourselves and how we live our lives. I hope that the more we understand the brain, the better we can help our patients live meaningful lives.

### WHAT TYPES OF BRAIN INJURIES DO YOU SEE MOST OFTEN?

We typically categorize brain injuries into traumatic brain injuries and non-traumatic brain injuries. Traumatic brain injuries are injuries to the brain that result from trauma, such as a car accident, falls or an object striking the head. Non-traumatic brain injuries are injuries to the brain from non-trauma, such as from brain tumors, severe heart attacks and brain infections.

We treat patients with all types of brain injuries, from mild brain injury (concussion) to the most complex and severe conditions. What distinguishes Brooks' brain injury continuum of care from other healthcare systems is our ability to take care of complex, catastrophic brain injury conditions; and the extensive services we have available for all patients with brain injuries. I feel blessed and privileged to have these extensive services and excellent clinicians at Brooks to help patients with brain injuries live fulfilling lives with meaning, purpose, joy and dignity.





## DR. NGO PUBLISHED IN JAMA NEUROLOGY

### "Efficacy of Home-Based Telerehabilitation vs In-Clinic Therapy for Adults After Stroke: A Randomized Clinical Trial."

Dr. Kenneth Ngo was a co-investigator and co-author of this large multi-center randomized clinical trial looking at the efficacy of home-based therapy versus in-clinic therapy for adult patients after stroke. "We found that patients receiving activity-based training at home, with guidance via telemedicine, had substantial gains in arm motor function similar to traditional in-clinic therapy. This is a significant finding for post-stroke survivors who have difficulty getting to outpatient therapy centers," said Dr. Ngo. "Thanks to our wonderful and hard-working research team under the leadership of Dr. Raine Osborne, Brooks was one of the top three recruiting centers for this study. The success of this study solidified Brooks as a major research center in the StrokeNet network as well as catapulting Brooks' visibility to the national stage".

Citation: <http://bit.ly/2nwglt0>

**JAMA Neurology**

# Welcome Cassandra List, MD

Cassandra List, MD, recently joined the Brooks Medical Group. She is board-certified in Physical Medicine & Rehabilitation and is working with patients both in Brooks Rehabilitation Hospital and outpatient clinic. We're excited to have her on the team and asked her a few questions to get to know her better.

## WHAT MADE YOU DECIDE TO PURSUE A CAREER IN REHABILITATION MEDICINE?

Almost immediately on my first rehabilitation rotation as a medical student, I decided this is what I'm going to do. In rehabilitation, by nature, you look at the whole patient to really optimize their recovery and their healing. This means you have to consider not only medical issues, but also family life, what they do for work, what they do for fun, even cultural and spiritual beliefs that all impact their rehabilitation and ultimately their recovery. Most of the patients I work with have had their lives changed from one day to the next. I want to be alongside them, working on what is most important, as they recover and adapt to their new life.

## WHAT MADE YOU SPECIALIZE IN NEUROREHABILITATION AND SPASTICITY?

The day that I figured out I wanted to do rehabilitation was the same day I figured out I wanted to focus on neurorehabilitation. It was an intriguing subspecialty for many reasons. We've learned so much about the brain and its recovery, but we still have so far to go. It's a growing field where we are learning every day how we can best help improve a person's recovery. I decided to pursue the



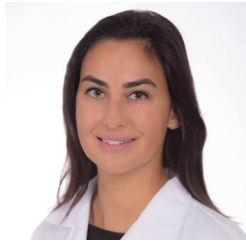
Neurorehabilitation and Spasticity Fellowship because it's one of the only fellowships in the country that focuses on this area. I stayed on for an extra year of specialized training focusing on the rehabilitation of patients who experienced stroke, traumatic brain injury, spinal cord injury, cerebral palsy and other neurologic conditions. I learned how we can use botulinum toxins, like Botox, Dysport, Xeomin and Intrathecal Baclofen pumps, to complement the physical rehabilitation so we can get the best outcomes for our patients.

## WHAT WILL YOU FOCUS ON AT BROOKS?

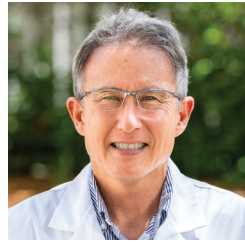
I am excited to be working with stroke and traumatic brain injury patients in the hospital, with a focus on neurorehabilitation and spasticity management in the outpatient clinic. I hope to help build on the excellent neurorehabilitation program that drew me to Brooks and expand our reach into the community to improve care for the traumatic and acquired brain injury patient population. I'm just happy to be on this journey within the field to see how far we can take patients in their recovery.



**Mabel Caban, MD**  
Staff Physiatrist



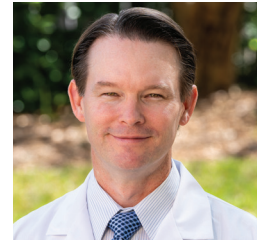
**Meghan Cochrane, DO**  
Staff Physiatrist



**Charles Dempsey, MD**  
Medical Director  
Rehabilitation Services at  
Bartram Crossing



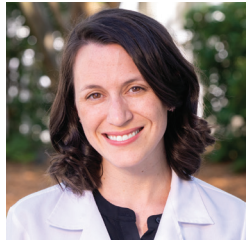
**Virgilio de Padua, MD**  
Internal Medicine



**Jantzen Fowler, MD**  
Internal Medicine



**Adria Johnson, MD**  
Staff Physiatrist



**Katelyn Jordan, OD**  
Low Vision Optometrist  
and Center Manager



**Cassandra List, MD**  
Staff Physiatrist



**Jorge Perez Lopez, MD**  
Staff Physiatrist



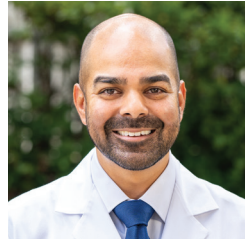
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Vice President of PM&R  
Consulting and Physician  
Relations



**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  
Aging Services



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Medical Director, Stroke  
Program, Memorial Hospital  
Consultant Liaison Service



**Keisha Smith, MD**  
Staff Physiatrist



**Sarala Srinivasa, MD**  
Staff Physiatrist



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



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



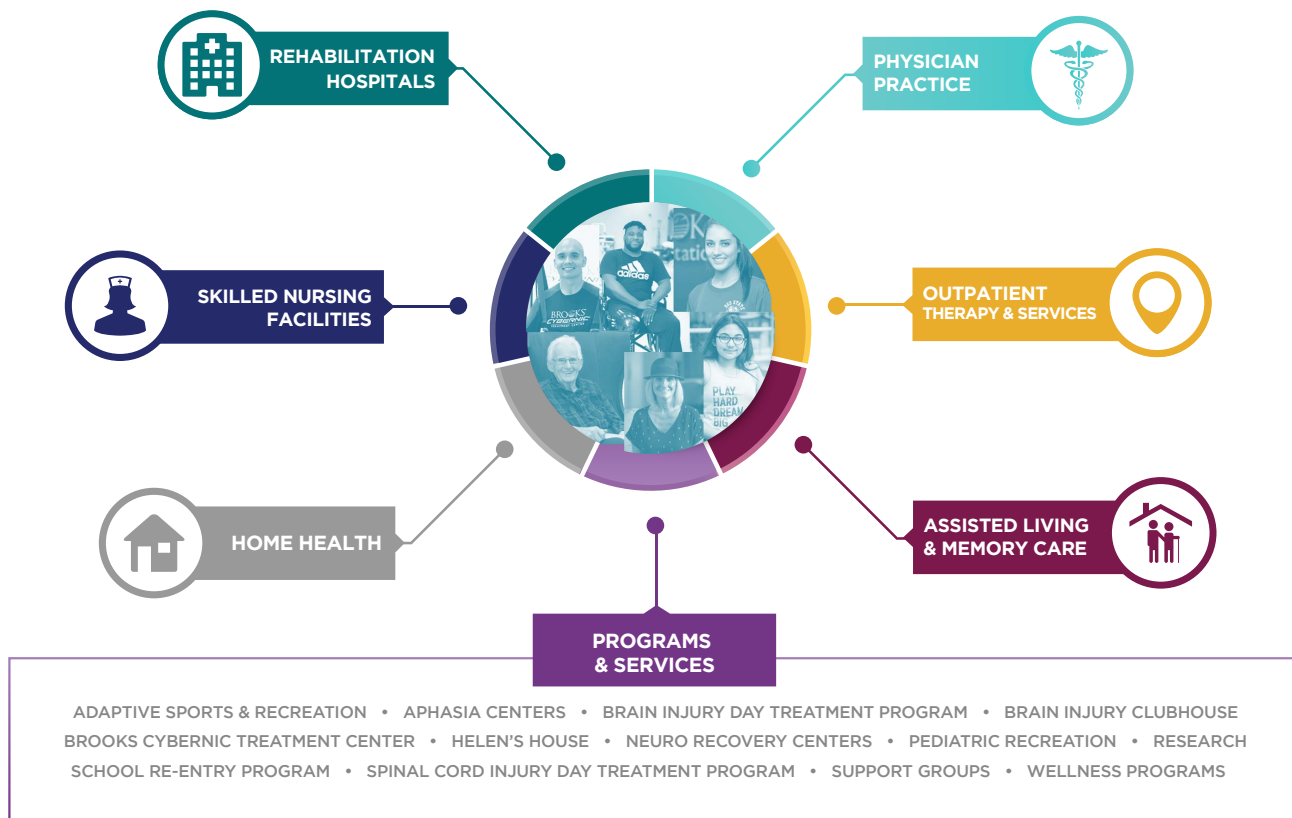
**Howard Weiss, DO**  
Medical Director,  
Pain Rehabilitation

The Brooks Rehabilitation Medical Group consists of 17 employed physicians and one optometrist, along with physician assistants and advanced nurse practitioners, to care for our patients in all settings.

# About Brooks

## BROOKS REHABILITATION

### SYSTEM OF CARE



"Patients are at the center of all we do at Brooks Rehabilitation. Through our coordinated system of care, not only can we provide seamless transitions for our patients between levels of care, we can also effectively treat patients in the right setting for their individual needs resulting in the best possible outcomes."

- Doug Baer, CEO

## Brooks Residents and Fellows Contribute to **ADVANCES IN BRAIN INJURY THERAPIES**

Brooks' Institute of Higher Learning (IHL) is known as a world-class organization incorporating evidence-based practice with professional development. IHL offers sought-after Physical Therapy Accredited Residency and Fellowship programs and Occupational Therapy Fellowship programs for post-professional clinical training, including neurologic specialization.

Here are the stories of two recent IHL residents/fellows who continued their careers with Brooks and are now contributing to brain injury education and research.



### **RYAN PATTERSON, OT**

After completing an integrated bachelor's and master's degree program in occupational therapy (OT) at the University of Missouri, Ryan Patterson was working at an acute care hospital in Virginia. "I was often the first OT person that brain injury or stroke patients and their families saw. I knew I could effect change right away and provide the latest treatments and information," said Patterson. "It reinforced my desire to work with neurologic patients." Encouraged by his mentors to get more education in the field, Patterson was accepted into IHL's one-year Neurologic OT Fellowship. "It was a lot of work, but I'm passionate about the field and it helped me become a much better therapist," said Patterson. Staying with Brooks after his fellowship, Patterson now works in Brooks' Jacksonville Neuro Recovery Center (NRC). A professional goal of Patterson's is to teach, and the IHL is giving him that opportunity. He is slated to begin co-teaching the IHL continuing education course in brain injury therapies. "This course has been offered for more than eight years here at Brooks so there is a plethora of

content, but I've been able to add current research from the Fellowship," said Patterson. "I'm also able to draw on specific case examples from my BI rotation, which is another positive example of how the Fellowship helped me grow."

### **STACI BALKAN, PT, DPT, NCS**

As an exercise science education major at The Ohio State University, Staci Balkan knew she wanted to be a physical therapist specializing in neurologic cases. "I found it amazing how the body could heal itself through therapy, even after a serious brain injury," said Dr. Balkan. She was completing the Doctor of Physical Therapy (DPT) program at Elon University and researching her final internship when she learned about Brooks. "I saw what Brooks was doing with neurologic rehabilitation and knew I wanted to practice there," said Dr. Balkan. The only problem? Elon and Brooks did not have an internship relationship. No matter - Dr. Balkan worked to create one (that still exists today). After her internship, she stayed with Brooks and was soon accepted into IHL's one-year Neurologic Residency Program. The Program taps clinical and academic leaders from across the country, and residents rotate through different brain and spinal cord injury areas. "The Residency made me a better clinician," said Dr. Balkan. Drawing on a specific case from her residency, she is currently preparing a paper for publication on the effects of early aggressive mobilization on an individual in a minimally conscious state. (See related article segment on page 15 - The Disorders of Consciousness Program.)



# Prichard Colón

## Fighting a New Opponent: Brain Injury



*Prichard Colon (L) and Terrel Williams exchange punches in their super welterweights bout that ended in tragedy on Oct. 17, 2015 (Photo by Patrick Smith/Getty Images).*

On Oct. 17, 2015, American-Puerto Rican professional boxer Prichard Colón's life was forever changed. Prichard's professional record was 16-0 when he entered the ring for a 10-round welterweight fight. During the match, he was struck in the back of the head multiple times. He fell to his knees and said he felt dizzy as his mother, Nieves Colon, helped him back to his dressing room. He started vomiting, collapsed and was rushed to the hospital.

Prichard suffered a massive brain bleed from the repeated hits. This led to swelling around his brain that required a left hemisphere craniotomy, a removal of part of his skull, to allow the brain to expand and heal. Prichard was in a coma for over a year. Though he received acute hospital and inpatient rehabilitation out of state, he had not improved beyond an unresponsive wakefulness state (UWS) – previously called the vegetative state. Individuals in UWS have a sleep/wake cycle but do not otherwise interact in a meaningful way.

Nieves, now his full-time caregiver, continued to search for answers and someone who could help her son. After a visit with a neurologist in September 2017, Nieves was told the crushing news that she shouldn't expect any additional improvement from Prichard.

It was then that Nieves searched and found Dr. Kenneth Ngo with Brooks Rehabilitation. In December 2017, she brought Prichard from their home in Winter Park, Fla., to Jacksonville, Fla., for an evaluation with Dr. Ngo that offered their first glimmer of hope. He determined Prichard would be a good candidate for Brooks' comprehensive outpatient therapy programs.

Prichard began outpatient therapy at Brooks' largest clinic. His therapist noticed he was tracking with his eyes and contacted Alisha Russell, M.S., CCC-SLP, for an eye-gaze evaluation. Russell was the lead therapist for the Brooks Rehabilitation Alternative Voices or BRAV. BRAV is an augmentative and alternative Communication (AAC) specialty at Brooks.

In March 2018, Russell met Prichard and started along the most significant road in his recovery.

Prichard's brain damage impaired his ability to move his body and speak. Prichard's family and doctors were unable to tell if he was emerging or even if he understood what was going on around him. "He was essentially locked inside his body and no one was listening to his eyes. Once we showed him we were listening, I believe it helped him emerge more," said Russell.

After calibrating his eyes to an AAC device, Prichard was able to answer yes/no questions in both English and Spanish at 80 percent accuracy by looking at his answer choices on the screen. There was finally proof that Prichard was aware and capable of communicating. Nieves cried tears of joy.

While Prichard used to train for boxing matches, he now began the tough training to regain the skills he lost. Both his cognitive and physical endurance was very low. Initially, he was only able to tolerate about 45 minutes of an hour long session. Russell started teaching him cause and effect with his eyes. Session after session, they repeated motor learning approaches to navigate the speech-generating device (SGD) until he could navigate independently to communicate his basic wants and needs. Prichard is a music lover, and his humor could not be contained. He was excited when he was finally able to ask for his favorite songs, tell a joke and tell his family, "I love you."

Nieves was driving Prichard two and a half hours up to Orange Park, Fla., from their home in Winter Park, Fla., four days a week for speech therapy. Little by little, he was able to move a toe or a finger. When this movement started to increase, the team recommended that Prichard begin physical and occupational therapy, too. Nieves made the decision to stay at Helen's House, Brooks' family housing during the week so Prichard could attend several hours of therapy per day.

When Prichard began occupational therapy in June 2018, he had no active movement in either arm. April Coats, OTR, Brooks Rehabilitation Orange Park center manager, worked on range of motion using electrical stimulation to jumpstart his muscles. She utilized a deltoid sling for early motion, along with splinting. Prichard first started getting elbow movement back followed by wrist and finger movement. By the beginning of 2019, he could do some shoulder work, grasp and release pegs and follow commands. As his right hand continued to improve, they worked on more functional activities like simulated feeding and gestures.

In physical therapy, Prichard was unable to move any of his limbs on command and required a Hoyer lift to help him transfer from his wheelchair to a treatment table. It did not take Prichard long to progress as he was able to stand with some assistance after just one month of hard work. Brian Ericksen, PT, DPT, focused on improving his balance in the seated position, improving the strength in his legs so he could help with transfers and attempted to manage his spasticity with activities like assisted walking and standing. With Prichard's work ethic and his mother's constant encouragement, he was able to keep improving his condition day after day.

Prichard has since walked about the length of a football field with the help of therapists and some assistive devices. He can maintain his balance while sitting unsupported for over five minutes, and can stand, with some assistance, to help make his transfers easier on those helping him. "The only barrier to Prichard's success has been his unrelenting desire to flirt with every female in the clinic. Prichard may be competing for something different now than he was earlier in his life, but he has never stopped being a champion," said Ericksen. Prichard's remarkable progress captured the attention of national and international media outlets. The Washington Post, Univision and WAPA TV from Puerto Rico came to Jacksonville to highlight Prichard, Nieves and his care team. Singer Marc Anthony also shared video messages with Prichard and invited him to a concert.

"What made the difference? At Brooks we communicate. We listen to what's important to the family. We celebrate small



*Prichard jokes with his mother, Nieves Colon, his full-time caregiver.*



*Alisha Russell, MS, CCC-SLP, works with Prichard early in his recovery using an AAC device to improve his communication and cognition.*

wins every day. It's our job as therapists to keep the focus on what he can do, not what he can't," said Russell.

Prichard recently began therapy at Brooks' larger Neuro Recovery Center located within Brooks Rehabilitation Hospital. He is working with Michael Braun, MSOT, OTR/L, BCPR, assistive technology specialist, to be evaluated and trained on technology that may be able to make him more independent in his daily functions. He'll also have access to state-of-the-art equipment as well as circuit training programs to help him transition to a more independent exercise program.

"With Prichard it took a village. From physicians, therapists, our low vision program, technology specialists, all the way to fellow patients, Prichard's progress is the product of a true rehabilitation team. I can't wait to see how much more he'll improve. He is already an inspiration to us and millions of people around the world," said Russell.

“Rehabilitation physicians see everything – they become the ‘quarterback’ to determine the proper setting and then coordinate the care.”

– Kenneth Ngo, MD, Medical Director of Brooks’ Brain Injury Program



Brooks Rehabilitation

# Brain Injury Program

Brooks Rehabilitation's Brain Injury Program provides a continuum of care for the whole spectrum of brain injuries. From inpatient care to outpatient therapies, to home health services and community resources, a person can enter Brooks at any setting at any time to get the rehabilitation help they need for the best possible outcome.



## STATE-OF-THE-ART INPATIENT REHABILITATION

The 2nd floor of Brooks Rehabilitation Hospital is dedicated to the most complex, traumatic brain injuries in the country, with two-thirds of our brain injury patients coming from outside the Jacksonville area. Brooks Rehabilitation Hospital is accredited by CARF (Commission on Accreditation of Rehabilitation Facilities) in brain injury rehabilitation, meaning it has proven outcomes achieved through evidence-based practice.

“For a person who has suffered a brain injury, the best course of action is to see a rehabilitation physician to evaluate and determine what they need to help maximize their recovery,” said Kenneth Ngo, MD, Medical Director of Brooks’ Brain Injury Program. “Rehabilitation treats medical conditions, but we also look at the end goal – improving quality of life and maximizing function. Rehabilitation physicians see everything – they become the ‘quarterback’ to determine the proper setting and then coordinate the care.”

In addition to receiving care from specialized nurses, along with physical, occupational, and speech therapies, a patient enrolled in the brain injury program at Brooks Rehabilitation also has access to a team of psychologists. Angela Colaiezzi, PSY.D, specializes in clinical neuropsychology, a field within clinical psychology, to investigate the impact of both normal and abnormal brain functioning.

“As a member of the interdisciplinary team on the brain injury unit, I work closely with patients and their families, as well as our rehabilitation physicians and treatment teams, in order to address the cognitive, emotional and behavioral needs of our patients and families,” said Dr. Colaiezzi. “The referral from the physician and information received from the team regarding a patient could be for mood-related issues, but upon further evaluation, you could find out the patient hasn’t been sleeping, they may be in pain or they may be frustrated with their recent loss of independence. We become investigators, with assessments and evaluations, to figure out what those barriers are for each patient and then we provide support and techniques to intervene and improve.”

For Dr. Colaiezzi, Brooks stands alone with the continuum of care it offers, from the early days after an injury through the years that it may take for recovery.

“Because this is an interdisciplinary environment, everyone who works with our patients, from the physicians, therapists, nursing, as well as supporting staff, are all equally important members of the team. We are always in communication with one another behind-the-scenes to improve the patients’ overall recovery,” said Dr. Colaiezzi. “Every brain injury, and every recovery, is unique, so we have to be patient-centered. At Brooks, the patients’ needs are always first. We tailor their treatment from the minute they come in the door.”

“Every brain injury, and every recovery, is unique, so we have to be patient-centered. At Brooks, the patients’ needs are always first. We tailor their treatment from the minute they come in the door.”

– Dr. Angela Colaiezzi



## THE DISORDERS OF CONSCIOUSNESS PROGRAM

Brooks Rehabilitation Hospital's Disorders of Consciousness (DoC) Program is a specialized short-term program, initiated more than 20 years ago, and specifically designed for patients who present in a reduced or minimally conscious state.

Laura Geiwitz, CPCRT, SLP, has been a cognitive therapist at Brooks Rehabilitation Hospital for 15 years and works directly with DoC patients and their families. "The DoC program sets Brooks apart. In most other health systems, the patient must be able to engage with a therapist and follow some directions for inpatient brain injury rehabilitation to begin," said Geiwitz. "When you have a disorder of consciousness, the patient doesn't have the capacity to do that. Our DoC program provides comprehensive evaluations and therapy for these patients – earlier than the usual rehabilitation process."

The DoC patients are no longer in a coma – the deep unconscious state – and are designated by how much they interact with their environment. Patients in the unresponsive wakefulness state (UWS) – previously called the vegetative state – have a sleep/wake cycle but do not otherwise interact in a meaningful way. The next level is the minimally conscious state (MCS). These patients have a low, but definite, behavioral response to their environment.

Shortly after admission into the DoC program, a comprehensive team evaluation, led by a neuropsychologist, is completed with a cognitive therapist, a physiatrist, as well as physical, speech and occupational therapists. This evaluation provides the family with an accurate clinical diagnosis of their loved one's recovery stage– either UWS or MCS.

A patient is in the DoC program for about two to three weeks, during which time the team provides specific therapies, determines the best mix of medications and identifies opportunities to provide stimulation that may promote recovery. The team conducts regular measurements to determine progress. If in that timeframe the patient progresses and can demonstrate consistent and purposeful interaction with the environment, such as using basic objects or reacting to communications or commands, they are said to have "emergence from DoC." The patient would now be able to engage with a therapist – even if at a low level – and would become a candidate for traditional brain injury rehabilitation.

If a patient doesn't emerge within the two- to three-week timeframe, it doesn't mean the patient has stopped progressing or won't emerge later. However, it is not optimal to leave the patient in the hospital after that time. So, a major part of the DoC program is to fully train and equip patient families/caregivers to care for their loved ones at home, and to recognize progress and potential emergence for themselves.

"We never lose hope," said Geiwitz. "If the patient goes home and later emerges, they frequently come back to Brooks for continued rehabilitation into our comprehensive brain injury rehabilitation program."

## DEDICATED NEURO TEAMS CONTINUE PROGRESS IN SKILLED NURSING FACILITIES

When patients are either not quite ready to go home or if they aren't able to handle the intensity of therapy at Brooks Rehabilitation Hospital, they may transition to one of Brooks' two skilled nursing facilities – Bartram Crossing (BC) or University Crossing (UC). Given the complexity of brain injuries, each facility has a dedicated neurological program team. "At UC, a patient may have fewer therapy sessions a day, but they are generally longer sessions. We try to work on specific patient-centered goals," said Tanya Doidge, PT, DPT, NCS (neurologic clinical specialist). Often two therapy disciplines will co-treat at the same time.





This allows for a broader range of treatments. Psychosocial interactions are also crucial at this stage of recovery. There are many group activities, including a cognitive group, current events groups and a community re-integration group, to help prepare a patient for discharge.

"I often use group therapies as another outlet to practice skills they are learning. For example, I told a patient with left-side weakness to try playing bingo using only his left hand," said Doidge.

"Recovery can look different for each patient with a brain injury. The entire team decides when and where the next best place for treatment will be for each person," said Marie Honaker, PTA, lead therapist of the UC neuro team. Caregiver training and education is also crucial. Patients have undergone a life-changing event, which takes its toll on the entire family. Caregivers can stay with patient to assist and even the family dog is allowed to stop in for a visit. Often patients will cheer each other on and family members become a support system for each other.

"Due to the dramatic nature of life after a brain injury, I find it so rewarding to spend time with each patient and truly celebrate their progress. To see someone re-learn skills they lost and start to become the person they were before the brain injury is what motivates me to come to work every day," said Honaker.

## COMPREHENSIVE, GROUP-BASED THERAPY AT THE BIDT PROGRAM

To help continue progress and recovery after inpatient, skilled nursing or other outpatient brain injury rehabilitation, Brooks offers its Brain Injury Day Treatment (BIDT) program.

BIDT Program Director Dr. Russell Addeo is a board-certified neuropsychologist who has been with Brooks for 25 years. "The BIDT was formed in 1993 as a place for brain injury patients to go after their hospital stay or inpatient rehabilitation," said Dr. Addeo. "The BIDT was the first brain injury outpatient program option at the time."

As opposed to Brooks' traditional, one-on-one outpatient treatments, the BIDT offers individual therapies, as well as operating in a group setting with intensive, interdisciplinary care – with physical, speech and occupational therapies,

psychotherapy, biofeedback, and neuropsychology – working together on a patient's goals.

"The BIDT provides comprehensive therapy that a patient wouldn't normally get with individual one-on-one work alone," said Dr. Addeo. "Participants are here five days a week, with an average stay ranging from six to 12 weeks. So, they're getting 25 to 30 hours of therapy a week, in which participants are interacting socially with the staff, therapists and other brain injury patients. The realistic, community environment can help with recovery and transition."

According to Dr. Addeo, the continuum of care found at Brooks is not common in other rehabilitation systems. "For anyone with a brain injury, this is the type of care you'd want to get," said Dr. Addeo. "A whole interdisciplinary system of care, with highly specialized physicians and professionals – who love what they do – providing evidence-based treatment in our inpatient rehabilitation facility. Then, patients can receive care in our outpatient programs and the comprehensive day treatment program. You're going to achieve your maximum, best outcome."



**"For anyone with a brain injury, this is the type of care you'd want to get."**

**– Dr. Russell Addeo**

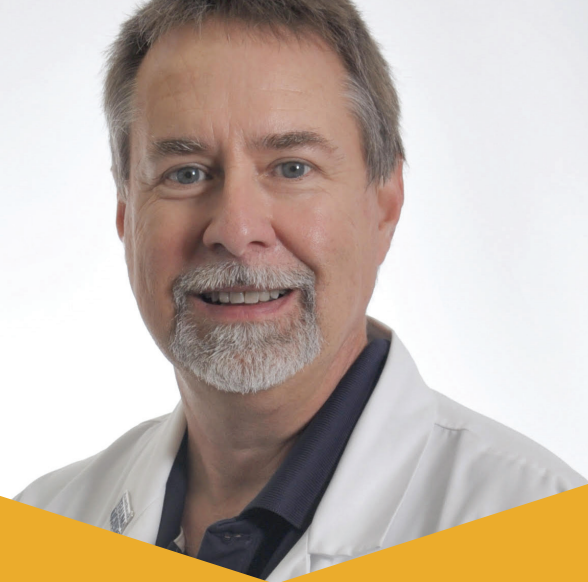


## BROOKS REHABILITATION'S HOME HEALTH AND CUSTOM CARE ALSO ASSIST BRAIN INJURY PATIENTS

Brooks' range of services for brain injury rehabilitation is not limited to our locations. Both Brooks Rehabilitation Home Health and Custom Care divisions deliver care to brain injury patients inside their own homes. Home Health provides a wide variety of skilled, professional medical services under the order and direction of a physician, meaning the services are generally covered under employer-provided or private insurance plans, as well as most Medicare plans. Custom Care offers high-quality, non-medical caregiving services that give needed assistance to patients and their families. Custom Care is usually paid for out-of-pocket by the patient or the patient's family, although there are a few specific opportunities for reimbursement.

"Many times, brain injury patients have medical or safety issues that make leaving their homes for rehabilitation appointments practically impossible," said Adam Hoffman, Director of Rehabilitation for the Home Health division. "One major issue is balance and therefore being a fall risk." However, Adam notes that seeing patients in their homes versus a facility can have benefits.

*Continued on page 18*



## Agitation and Brain Injury Patient Rehabilitation

Eugene Rankin, Ph.D., is a rehabilitation neuropsychologist at Halifax Health/Brooks Rehabilitation - Center for Inpatient Rehabilitation (CIR), a 40-bed, state-of-the-art inpatient rehabilitation center located within the Halifax Health Medical Center in Daytona Beach, Fla. Halifax Health is the Daytona Beach area's only Level II Trauma Center, helping patients with a wide variety of serious and complex injuries, including traumatic brain injuries. In his role as neuropsychologist, Dr. Rankin is able to manage patients within the ICU, through acute care, and eventually to the CIR and outpatient services. "You get to know and understand the patients. There is a 'community' nature to it. It's extraordinary," said Dr. Rankin.

Brain injury patients in critical care often have episodes of agitation and confusion, which can inhibit their recovery and keep them from rehabilitation. Medical staff may say a patient was "agitated" but that can be subjective. Dr. Rankin and his colleagues adopted the Agitated Behavior Scale (ABS), a 14-item scale of symptoms with ratings between one and four. "We were unique - ABS had never been used in a critical care setting before. Our critical care nurses rated patients twice a day as part of the patient notes. By using ABS earlier in the continuum of care, we have been able to comprehensively manage agitation in brain injury patients through medication and environment. Agitation does not become an impediment to rehabilitation," said Dr. Rankin.

Dr. Rankin, Dr. Danny Jazarevec and Dr. Rona Altaras from Halifax authored a paper on their findings - "Comprehensive brain injury agitation management in the critical care setting: Preliminary results on a multidisciplinary neurobehavioral approach," which was recently published in The Journal of the Intensive Care Society.



“You see them in their real, everyday environment,” said

Hoffman. “You can tailor the rehabilitation to help them function better in that environment.” Home Health medical services include those performed by registered nurses (RNs), licensed practical nurses (LPNs) and certified nursing assistants (CNAs) as well as those from licensed therapists – physical, respiratory, speech and occupational.

The non-medical Custom Care offerings include assistance with personal hygiene and daily living needs; medication reminders; meal preparation; movement and mobility; and light housekeeping and laundry. Transportation to appointments, the grocery store or visits to a friend or family member’s home can also be scheduled through care coordinators. According to Kelly Wells, Director of Operations for the Custom Care division, it often boils down to giving family members or other primary caregivers a break. “We recently had a brain injury patient who would become very agitated at different times throughout the night,” said Wells.

“The family was not getting the rest they needed to function properly – they couldn’t keep up 24 hours a day. By having Custom Care come in for the ‘night shift,’ the family had peace of mind and could get the sleep they needed.”

Both Hoffman and Wells agree that coming into a patient’s home is a privilege. “We are guests in their homes,” said Hoffman. “We get to see and understand how they live. They let us into their lives – it’s an honor.” Wells notes the relationships that can develop. “It’s very personal, one-on-one care,” said Wells. “One of our Custom Care employees could be with a client for months, sometimes years. It’s like becoming a family member – it’s a big responsibility.”

## A WEALTH OF RESOURCES FOR BRAIN INJURY OUTPATIENTS

“Brain injuries in and of themselves are very complex. Typically, cognitive, communication and physical deficits all come together in a brain injury. While there are common threads, no two brain injuries are the same because of

how complex – and individualized – the brain is for each person,” said Gina Brunetti, PT, DPT, NCS. In the outpatient setting, patients with brain injuries can get the one-on-one, individualized therapies they need – neuro, physical, speech and/or occupational therapies – at one of Brooks’ 39 clinics throughout Florida.

“What’s great about Brooks is how many resources we have available,” said Dr. Brunetti. “Specifically, at the Healthcare Plaza outpatient clinic where I work, we have a neurologic gym and an orthopedic gym. So, if someone has both a brain injury and a limb injury, I can draw on the orthopedic specialists to assist me. Our Motion Analysis Center is here also, so we can readily do a gait analysis for neurological impairments that affect walking.”

For Dr. Brunetti, working with outpatients means having the opportunity to be with them for a longer period as they transition back to their day-to-day lives. “Helping brain injury patients get back to doing the things they love, participating with their families and community again, has made a deep impact on me.”

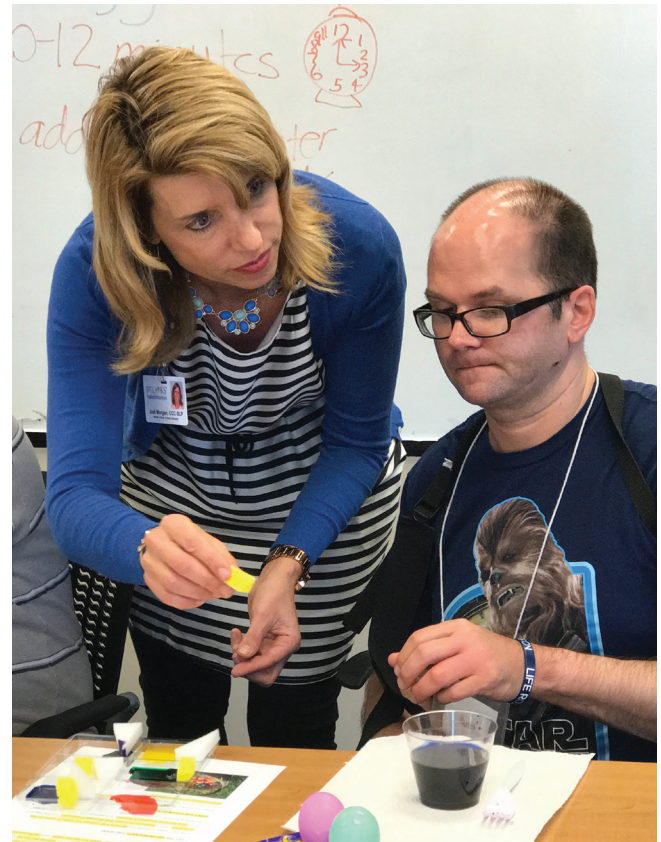
## COMMUNITY PROGRAMS HELP CONTINUE THE RECOVERY

Brooks offers a number of programs and resources – available to the community regardless of a prior connection to Brooks – that help brain injury patients continue their progress.

Located in Jacksonville, Fla., the Brain Injury Clubhouse is the first and only acquired brain injury clubhouse in the state of Florida and one of less than 20 worldwide. Brooks Clubhouse members can assist in clubhouse operations, such as meal planning and preparation, business office work, facilities maintenance and product production. They may also choose to participate in a variety of activities, such as personal fitness, yoga, music, arts and crafts, cognitive activities and community outings.

The Brooks 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.

The Brooks Rehabilitation Aphasia Center (BRAC) was created to fulfill an unmet need in our community. Aphasia is an impairment of language, usually caused by a brain injury or stroke, however it does not affect intellect. The BRAC offers a community track, providing coordinated group activities, and an intensive, comprehensive aphasia program,



providing individual therapy and immersive group therapy for 20-25 hours per week for six weeks.

Brooks Rehabilitation also offers one of the most comprehensive and diverse adaptive sports and recreation programs in the country. The program provides opportunities for fun, fitness and friendship to individuals of all ages and abilities living with physical and/or visual disability. Individuals may enjoy recreational or competitive participation in year-round team and individual activities. No experience is required and there is no cost for participation with all equipment, instruction and coaching provided free to all individuals.

“You can come into the Brooks system at any point for the resources you need,” said Dr. Brunetti. “A brain injury patient may start as an outpatient with us. They could get occupational therapy here at the Plaza, go to the Aphasia Center for speech therapy, and go to Adaptive Sports for bowling, all going on at the same time. It’s a mixed, collaborative approach – with the ultimate goal of getting them back to their life as best as we can.”

# Mike Mitchell

"I tell the members, 'Don't tell me you can't do something. You're talking to the wrong guy. Tell me you'll try. I'll help.' No one has ever let me down."



In 2006, Mike Mitchell suffered a traumatic brain injury in a motorcycle accident that left the right side of his body broken and his brain bleeding in five places.

After four weeks in a coma, Mitchell woke up to the fact that he had to rebuild both his body and his brain. "I had such great care and compassion from everyone while I was at Brooks Rehabilitation Hospital and in the Brain Injury Day Treatment Program," he says. "It changed my perspective on life."

Mitchell worked in the food industry before his accident and was asked to supervise the kitchen when the Brooks Clubhouse opened in 2008. He now extends the same caring and compassion that he received to Clubhouse members. He is the perfect person to do so because he understands what it's like to live with a brain injury.

While in the Day Treatment program I learned that my brain injury will never go away as I have to figure out a different way

of getting there and getting things done. That's what I bring to our members," said Mitchell.

He shared the story of a young man who was trying to sharpen a knife in the kitchen. He told Mitchell he couldn't because he only had use of one arm. Mitchell showed him a new way.

"I tell the members, 'Don't tell me you can't do something. You're talking to the wrong guy. Tell me you'll try. I'll help.' And if someone truly can't after trying, that's ok too. I tell them to do their best and that's good enough. No one has ever let me down."

The best part of Mitchell's job is the feeling of satisfaction at the end of every day. "Not a job well done satisfaction. I had that at all my past jobs. But the satisfaction that I am truly helping make a difference in someone's life."

## Integrated, Multidisciplinary Approach to Concussion

Unique to the region, our program provides an integrated, multidisciplinary approach to evaluate and treat both children and adults with concussion resulting from all causes, including motor vehicle accidents, falls and recreational or sports injuries. Our professional team of more than 70 clinicians is specifically trained in post-concussion rehabilitation.

- Neuropsychologists
- Physicians
- Physical therapists
- Occupational therapists
- Speech-language pathologists
- Athletic trainers
- Optometrists
- School liaisons
- Certified driving rehabilitation specialist
- Psychologists

### OUR TEAM HELPS PATIENTS REACH THEIR GOALS OF RETURNING TO SPORTS, SCHOOL AND WORK USING THREE EVIDENCED-BASED PROTOCOLS:



#### RETURN TO SPORT

Once symptoms have resolved, a trained physical therapist will perform an evaluation and conduct a five-step protocol with drills specific to each patient's sport.

This allows for assessment of the effects of exertion after a concussion and careful progression through the stages of the Concussion in Sport Group (CISG) Protocol.



#### RETURN TO SCHOOL

Following neuropsychological consultation, school recommendations may be made to support a gradual and safe return to learning in the classroom setting. The school liaison may also assist with the implementation of accommodations and support, as needed.



#### RETURN TO WORK

This protocol supports participation in modified work activities to avoid making post-concussion symptoms worse. Collaboration with the patient, physician and employer is encouraged in order to create an effective plan for workplace success.

If you think you or your loved one has a concussion, please schedule an appointment with our team by calling **(904) 345-7210** or emailing **BrooksConcussion@BrooksRehab.org**. For more information, visit **BrooksRehab.org/services/concussion**.

## Brooks Research Scientists Receive National Awards



Two research scientists who are part of the Brooks Rehabilitation and the University of Florida College of Public Health and Health Professions (Brooks/UF-PHHP) Research Collaboration, each received awards from the American Physical Therapy Association (APTA) for their outstanding contributions to physical therapy research.

### CHATTANOOGA RESEARCH AWARD

Jason M. Beneciuk, PT, DPT, PhD, MPH, was awarded APTA's Chattanooga Research Award. This award recognizes an author or team whose published work in Physical Therapy Journal (PTJ) "demonstrates a significant contribution to physical therapy and presents a novel and innovative research study or theoretical model that addresses an important area of physical therapy."

Titled "Prediction of Persistent Musculoskeletal Pain at 12 Months: A Secondary Analysis of the Optimal Screening for Prediction of Referral and Outcome (OSPRO) Validation Cohort Study," the winning publication analyzed the possibility to predict patients who are at risk for long-standing musculoskeletal pain. The paper also went on to receive the Dean's Citation Paper Award for 2019 from the University of Florida's College of Public Health & Health Professions. This award is given by the college

to acknowledge innovation and excellence in research.

Dr. Beneciuk said, "With the national crisis of opioid misuse and addiction, the ability to predict who will develop long-standing pain will allow for better, earlier use of non-pharmacological treatments, such as physical therapy."

### EUGENE MICHELS NEW INVESTIGATOR AWARD

Emily J. Fox, PT, DPT, PhD, received APTA's Eugene Michels New Investigator Award, which honors impactful research activities undertaken by researchers within 10 years after the completion of their highest academic degree or fellowship. Dr. Fox is a research assistant professor in the Department of Physical Therapy at the University of Florida

in Gainesville, Fla., as well as Director of Neuromuscular Research and Director of the Brooks Motion Analysis Center for Brooks Rehabilitation in Jacksonville, Fla.

Dr. Fox's primary research interests focus on motor control and recovery following neurologic injury and disease. Her research includes a range of important and impactful issues to patients including the recovery of breathing function after spinal cord injury, improving walking tasks in older adults, and improving walking function after stroke and spinal cord injury.

She is already an author on 31 peer-reviewed publications including five as first author and two as senior author. Her publication portfolio includes physical therapy journals, rehabilitation journals, and multidisciplinary journals acknowledging the quality of her work as well as the appeal to a wide audience. Dr. Fox also has more than 20 national presentations.

Dr. Raine Osborne, PT, DPT, OCS, FAAOMPT, director of the Brooks Rehabilitation Clinical Research Center, said, "To receive either one of these prestigious awards is an honor, but to have two of our researchers nationally recognized for their incredible accomplishments is rare and truly speaks to the caliber of work that is being done here at Brooks and through the Brooks/UF-PHHP Collaboration."



## Brooks Rehabilitation Awarded Christopher & Dana Reeve Foundation 'Quality of Life' Grant

The Christopher & Dana Reeve Foundation National Paralysis Resource Center has awarded Brooks Rehabilitation nearly \$100,000 in Expanded Effect Quality of Life Grants. These grants support non-profit organizations that empower individuals living with paralysis.

The Expanded Effect Quality of Life grants mark the first time the Reeve Foundation has specifically awarded a cohort of grants that support significant expansion of strategies and programs previously supported by the Reeve Foundation, that are evidence-based, have proven innovative practices, and/or best practices to improve quality of life for people with paralysis, their families and caregivers.

"It is an exciting time as we continue to innovate new avenues to provide greater opportunities to our applicants," said Mark Bogosian, Director, Quality of Life Grants Program. "The Expanded Effect grants program promises greater impact. The program embraces Christopher and Dana Reeve's vision and legacy to advance the quality of life of those living with paralysis."

Brooks will apply the grant to two community programs benefiting veterans/members of the armed forces and

pediatric populations. Brooks will now provide weekly activities to a disabled veterans and members of the armed forces specific cohort for 36 weeks. Weekly yoga sessions will also be available and rotations of cycling, golf, trap shooting and kayaking clinics. Each clinic will serve 10-18 veterans and members of the armed forces.

As a past recipient of the Christopher & Dana Foundation's Quality of Life grant, Brooks received \$3,900 in 2016 to purchase pediatric sleds and helmets for children living with paralysis interested in ice sports. The Brooks Pediatric Recreation program will continue its growth with the Brooks Icebreakers Sled Hockey Team and the Jr. Wheelchair Basketball Team, The Bullsharks, the first of its kind in Florida.

"It's an honor to be selected as a grant recipient, and Brooks looks forward to growing our successful pediatric hockey and basketball teams and expanding into the area of pediatric water sports. It's a privilege to provide continued support to Veterans and the Armed forces in recreational Activities for our community," said Jessica Cummings, Executive Director of Community Health for the Brooks Health Foundation.



# BROOKS REHABILITATION

IS THE OFFICIAL REHABILITATION PARTNER OF THE



# JACKSONVILLE JAGUARS

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