BROOKS® Rehabilitation

BEYOND

FALL 2018

BROOKS® Rehabilitation

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BROOKS REHABILITATION BEYOND MAGAZINE ISSUE 1
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LETTER FROM THE CEO

Doug Baer

> "As we look to the future, we will continue our proactive focus in identifying new treatments, technologies and processes beyond those existing today."

Welcome to our inaugural edition of Brooks Rehabilitation Beyond. It is an exciting time in healthcare and for the Brooks organization. We look forward to sharing highlights of our initiatives through this publication.

We thoughtfully chose the title, "Beyond," to reflect our commitment to develop rehabilitation solutions meeting the needs of our patients in innovative ways, and we continuously seek to reach "beyond" those that exist today. Most importantly, the title recognizes our focus on helping patients and families look beyond their current injury, illness or life stage to achieve their highest quality of life.

I have been fortunate to work at Brooks Rehabilitation for 27 years and for the last 16 as CEO. It is extremely rewarding to work with so many talented and dedicated team members helping deliver on our organization's mission.

We have grown significantly over the years, adding various levels and settings of rehabilitation care such as skilled nursing, home care, assisted living, memory care, family housing and many community programs. We expanded our rehabilitation hospital in Jacksonville, Fla., and added a rehabilitation hospital in Daytona, Fla., in partnership with Halifax Health. Our outpatient therapy division has grown to 35 sites in North and Central Florida.

This growth has allowed us to treat more people and develop coordinated systems of care so we can serve our patients and families more holistically and efficiently.

As we look to the future, we will continue our proactive focus in identifying new treatments, technologies and processes beyond those existing today. We understand the importance of our mission and are determined to lead our industry into the future.

Q&A: Dr. Trevor Paris

We sat down with a few questions for Trevor Paris, MD, who serves as medical director for Brooks Rehabilitation Hospital, vice president of Brooks Rehabilitation Medical Group and medical director of University Crossing, one of Brooks' skilled nursing facilities. Dr. Paris is board certified by the American Board of Physical Medicine & Rehabilitation and the American Board of Independent Medical Examiners. He is a graduate of the Medical University of South Carolina and completed both an internship in internal medicine and a residency in physical medicine and rehabilitation at Loma Linda University Medical Center.

When, and why, did you join Brooks?

I joined Brooks in 2006. Previously, I spent more than 15 years as the medical director of rehabilitation services at Tennessee Christian Medical Center in Nashville, Tenn. For a number of reasons, a move closer to the east coast was necessary, and Brooks offered me the opportunity to concentrate on stroke rehabilitation, in which I had a keen interest. With Brooks' excellent reputation and comprehensive approach to rehabilitation, I decided to join the organization as medical director for its stroke program.

How is Brooks different today than in 2006?

We've expanded our services in all areas of stroke, traumatic brain injury (TBI) and spinal cord injury (SCI) – far beyond my original expectations. We now provide a full continuum of care and support to a patient at each stage of his or her recovery. As an example, patients may enter our system through the inpatient stroke program at Brooks Rehabilitation Hospital, which is accredited by the Commission for the Accreditation of Rehabilitation Facilities (CARF) recognizing it as a specialty program. After traditional outpatient and home health therapies are completed, a patient may participate in our community-based programs or ultimately continue his or her recovery with our partnership with the North Florida YMCAs. In our Stroke Wellness programs, survivors can work on long-term lifestyle management with trained specialists.

What do you see going forward for physical medicine and rehabilitation?

We're seeing that neurologists, neuroradiologists and neurosurgeons are doing amazing things in the initial treatment of stroke patients, such as tPA (Tissue plasminogen activator – tPA – is given intravenously within three hours of a stroke to dissolve the clot and improve blood flow to the affected part of the brain) and other endovascular techniques to reduce the extent of the stroke. Their work is helping to minimize the disability of stroke survivors, thus the patients have greater rehabilitation potential and improved overall outcomes. We see similar advancements in the management of TBI and SCI.

The delivery system for rehabilitation itself will undergo changes. There is increasing insurance pressure to shorten the length of stays under current methods. We'll see more emphasis on outpatient care, including group sessions, as well as home health and telehealth models. Patients will need to take charge of, and be more involved in, their own care. Examples of this at Brooks are our Neuro Recovery Centers (NRCs). Focusing on motor recovery, the NRCs have state-of-the-art equipment and technology staffed with expert clinicians, yet they have community and social elements that make them feel like the local gym. The NRCs can supplement current therapy sessions or serve as a continuation of therapy for long-term health benefits.

What would you say to a physician considering a career at Brooks?

I would say, "Come to Brooks." Our system of comprehensive rehabilitative care provides the physician an amazing array of services to offer their patients to achieve the best functional outcomes. The Brooks system is always looking for innovative ways to improve care delivery and serve our community. We have highly specialized personnel throughout the organization, cutting-edge technologies and robust research programs, which make for a dynamic work experience.

Dr. Paris examines patient Michael Lee Carter.

BROOKS REHABILITATION MEDICAL GROUP

Our Physicians

Mabel Caban, MD
Staff Physiatrist

Meghan Cochrane, DO
Staff Physiatrist

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

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

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
Associate Medical Director, Stroke Program

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 15 employed Physical Medicine & Rehabilitation physicians, along with physician assistants and advanced nurse Practitioners, to care for our patients in all settings.

Physiatrists are medical doctors who have completed training in the specialty of Physical Medicine and Rehabilitation (PM&R) and may be sub-specialty certified in brain injury, neuromuscular, pain, pediatric rehabilitation, spinal cord injury or other areas. The debilitating damage following a traumatic event can last a lifetime. Physiatrists emphasize long-term quality of life, creating a unique path for each patient based on their functional goals.

"We understand the impairments associated with illnesses and injuries," said Kerry Maher, MD, vice president of PM&R Consulting and Physician Relations. "We recognize the importance of saving of lives in medicine, but we also understand the importance of the quality of that life."

David Callaway

Alumni patients make some of the best Brooks Rehabilitation employees. They have a unique perspective on care and can provide support to our current patients. David "Bubba" Callaway is a prime example.

Bubba was watching TV before heading into work as a truck driver. He was sitting at his computer desk when the right side of his body "went to sleep." He called out to his mom, Elaine. Before she could dial 911, Bubba went blind. By the time the ambulance arrived, he was completely paralyzed.

Bubba had a brain bleed, also referred to as a hemorrhagic stroke. The blood accumulated in an area that controls vision, which caused his blindness. Neurologists were hopeful the bleed could be controlled without surgery, so they began medication to clot his blood.

GETTING WELL

Bubba attributes the medication, monitoring and tremendous family support for his improvements. He spent four weeks in rehabilitation and could walk with a walker when he left. Soon after Bubba returned home, a friend told him about the Brooks Stroke Wellness program at the YMCA. Bubba weighed 416 pounds at the time of his stroke. He knew that was a contributing factor and vowed to lead a healthier lifestyle. From the moment he joined Stroke Wellness, he felt like he belonged. In total, he lost 140 pounds!

One afternoon, Alice Krauss, manager of Brooks Adaptive Sports and Recreation (ASR), gave a presentation to the Stroke Wellness participants. She shared information on the many activities available to stroke survivors through the ASR. "I tried it, and the next thing you know, I'm doing about every activity Brooks offered. And if I wasn't participating, then I was volunteering. As I recovered, I tried to help others," Callaway said.

MOVING FORWARD AND MOVING OTHERS

The desire to give back and help others led to a permanent staff position for Bubba at Brooks. He heard that the ASR purchased a bus to help individuals who couldn't regularly attend events due to transportation issues. Bubba was so excited that he immediately applied for the bus driver position. He was the top choice for the job.

Bubba travels hundreds of miles each week on what is affectionately known as the "Bubba Bus." He provides so much more than transportation. Bubba cares for every single person he drives. They've become his extended family.

"I do this for them. If I won the lottery tomorrow, I'd be back here the very next day. I help them with their lives, and they help me with mine. No one has to thank me. You can just see the gratitude on their faces. This is way more than a job for me. The passion runs deep. When I needed help, there were people there for me. Now it's my turn to give back as a way to show gratitude for the second chance I've been given," Callaway said with tears in his eyes.

The "Bubba Bus" is so popular that the Rotary Club of East Arlington raised more than $65,000 to purchase a second bus for adaptive sports participants.


BROOKS
Rehabilitation

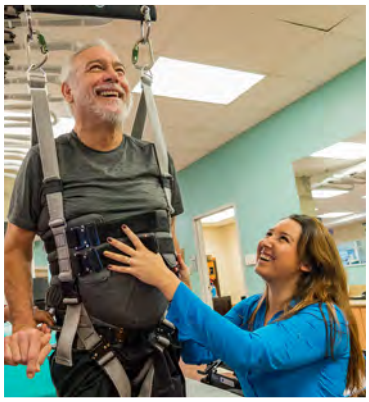
About Brooks Rehabilitation

For more than 45 years, Brooks Rehabilitation, headquartered in Jacksonville, Fla., has been a comprehensive source for physical rehabilitation services. Our rich history shows our commitment to our mission, our patients and our employees. We are proud of our caring culture and our focus on furthering rehabilitation through research and treatment innovation.

Our system of care offers innovative, evidence-based, personalized treatments for our patients. We offer a variety of care options to ensure individuals are in the right setting for their needs, resulting in the best possible outcomes.

Our system of care includes:

- Inpatient rehabilitation
- Skilled nursing
- Home health
- Outpatient therapy
- Assisted living and memory care
- Physician practice
- Hospital partnerships
- Community programs



J. Brooks Brown, MD

October 31, 1920 ~ January 4, 2018

Our early days were spent pioneering rehabilitation treatment as a part of the Cathedral Foundation. In 1982, Memorial Medical Center purchased the Cathedral Rehabilitation Hospital license. By 1994, we became a freestanding hospital and an independent system. Each evolution required a name change until we solidified our vision as Brooks Rehabilitation. The Brooks name was selected as both a tribute to our founder, **J. Brooks Brown, MD**, and as an opportunity to create an identity as unique as the people who come to us for care.

Throughout his career, Dr. Brown was always a risk taker, an innovator and a visionary. His commitment to servant leadership and continuous learning still guide our organization. Brooks' highly trained clinicians provide advanced therapy and medical care, along with the compassion, motivation and hope to help people reach their highest level of recovery.

BROOKS BY THE NUMBERS:

Over 50,000 Patients Served Annually

Rehabilitation Hospital

160-bed freestanding rehabilitation hospital in Jacksonville, Fla., with **3,000+** annual admissions

Halifax Health | Brooks Rehabilitation Center for Inpatient Rehabilitation: **40**-bed unit within Halifax Health in Daytona Beach, Fla., with **750+** annual admissions

Skilled Nursing

Bartram Crossing: **100**-bed skilled nursing facility with **1,200+** annual admissions

University Crossing: **111-bed** skilled nursing facility with **1,400+** annual admissions

Both are focused on short-term rehabilitation

Home Health

A Medicare and ACHC-certified home care agency **serving 23 counties** with **8,500+** annual admissions

Average daily census of **1,200**

Brooks Custom Care provides **134,000+ hours** of personal and companion care services per year, with 245 clients served each month.

Physician Practice

15 employed Physical Medicine & Rehabilitation physicians, along with physician assistants and advanced nurse practitioners, to care for our patients in all settings.

COMMUNITY PROGRAMS

Adaptive Sports & Recreation: one of the most comprehensive adaptive sports programs in the country, providing fun and fitness for people living with physical disabilities.

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

Clubhouse: day program for those with an acquired brain injury.

Clinical Research Center: clinical trials to advance the science of rehabilitation.

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.

Outpatient Therapy

35 clinics and growing; serving **35,000+** patients annually

385,000 patient visits annually

Specialty clinics include sports therapy, balance, low vision, motion analysis, pain rehabilitation and brain injury day treatment

Assisted Living & Memory Care

61-unit assisted living community

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

Hospital Partnerships

Therapy services provided in two acute care hospitals delivering more than **166,000** units of service per year

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.

Wellness programs: specialized programs in partnership with the YMCAs of Florida and Halifax Medical Center for individuals with multiple sclerosis, stroke, Parkinson's and brain injuries.

SYSTEM SUPPORT

The Institute of Higher Learning expands the reach of clinical and professional programs by offering continuing education and clinical student internships, as well as residency and fellowship programs to the greater health care community.

Helen's House is a nonprofit hospitality house offering affordable, temporary lodging to Brooks' patients and their caregivers.

Recognizing Excellence

ADVISORY BOARD WORKPLACE OF THE YEAR

Brooks Rehabilitation received the Advisory Board 2018 Workplace of the Year Award. The annual award recognizes hospitals and health systems nationwide that have outstanding levels of employee engagement. Brooks Rehabilitation is one of only twenty organizations nationwide to receive the award.

BROOKS REHABILITATION HOSPITAL MAGNET® RECOGNITION

Brooks Rehabilitation Hospital achieved Magnet recognition in 2016 as a reflection of its nursing professionalism, teamwork and superiority in patient care. The American Nurses Credentialing Center's (ANCC) Magnet Recognition Program® is recognized as the gold standard of nursing excellence.

With this credential, Brooks is one of only 469 healthcare organizations in the U.S. out of 5,534 U.S. hospitals to achieve Magnet recognition. Brooks is one of only four freestanding inpatient rehabilitation facilities in the country to achieve this designation.

MULTIPLE QUALITY AWARDS FOR SKILLED NURSING AND ASSISTED LIVING

Brooks Bartram Crossing and University Crossing, our skilled nursing facilities, and Bartram Lakes, our assisted living facility, are committed to ensuring their guests receive both the highest quality care and best possible experience. Multiple national agencies agree.

- Bartram Crossing earned a Five-Star quality rating from the **Centers for Medicare & Medicaid Services** (CMS), the federal agency that sets and enforces standards for nursing homes.
- Bartram Crossing's Five-Star rating earned them a place on the **US News & World Report** "Best Nursing Home in Florida" list.
- Bartram Crossing has earned the **Joint Commission's Gold Seal of Approval®**, reflecting an organization's commitment to providing safe and effective patient and resident care.
- The **American Health Care Association** and National Center for Assisted Living (AHCA/NCAL) recognized Bartram Crossing and Lakes as a 2018 recipient of the Silver – Achievement in Quality Award for their dedication to improving the lives of residents through quality care. Our University Crossing team was awarded the Bronze - Commitment to Quality Award. Bronze is a pre-requisite for Silver.
- The **American College of Health Care Administrators** recognized Bartram Crossing as a top-performing skilled nursing facility based on quality indicators, occupancy and three years of survey data. Maria Interiano, administrator, was presented with the Eli Pick Facility Leadership Award.

Jenoa Alford

Jenoa Alford was enjoying his yearly summer visit to Jacksonville, Fla., when he was struck by a car and dragged several feet. Little Jenoa was left with several skull fractures and a traumatic brain injury. He then suffered a stroke after the accident, leaving the left side of his face slightly paralyzed due to nerve damage.

Jenoa came to Brooks Rehabilitation after two surgeries and several days in intensive care. Jenoa amazed doctors and therapists with his dramatic improvements. After a week at Brooks, he was well enough to be discharged home. When asked what his favorite memory was, he said, “They threw me a birthday party while I was here. It was fun!”

After discharge, Jenoa and his parents used the Brooks School Re-entry Program (BSRP) to help aid in the smooth transition back to school. Successful school re-entry is extremely important to children because their injuries are so often misunderstood. The BSRP provides training and support to teachers, administrators and classmates regarding the child’s specific medical diagnosis and possible consequences.

Jenoa had incredible resilience. Despite all that he endured, he is back to being a typical child. He loves football, video games and spending time with his friends at school.

Brooks Rehabilitation brings revolutionary "**HAL**" technology to the United States

Maverick Moody

A U.S. FIRST FOR BROOKS

In March 2018, at the Brooks Cybernic Treatment Center in Jacksonville, Fla., spinal cord injury patient Maverick Moody did something no one in the U.S. had ever done before.

BROOKS®
CYBERNIC
TREATMENT CENTER

Standing tall and supported by a harness, Maverick's waist and legs were strapped into equipment that looked like something from a science fiction movie. Holding on to hand rails, Maverick, along with members of his Brooks physical therapy team, watched a large, split screen. One section showed Maverick himself, the other sections showed oscillating wave frequencies. With intense concentration, Maverick sent command signals from his brain to the robot – which turned the signals into leg motion. The spinal cord injury could have put him in a wheel chair for life, but at Brooks, Maverick Moody began using his own brain commands to – quite literally – take the first steps in his recovery.

Maverick was the first beneficiary of Brooks Rehabilitation's partnership with Cyberdyne, Inc., a Japanese medical and social innovation company. Cyberdyne's Hybrid Assistive Limb (HAL) technology is the world's first advanced robotic treatment device shown to improve a patient's ability to walk. Now FDA-cleared, the Brooks Cybernic Treatment Center was the first facility in the U.S. offering the innovative, landmark treatment to individuals with spinal cord injuries.

HAL's Motion Principle

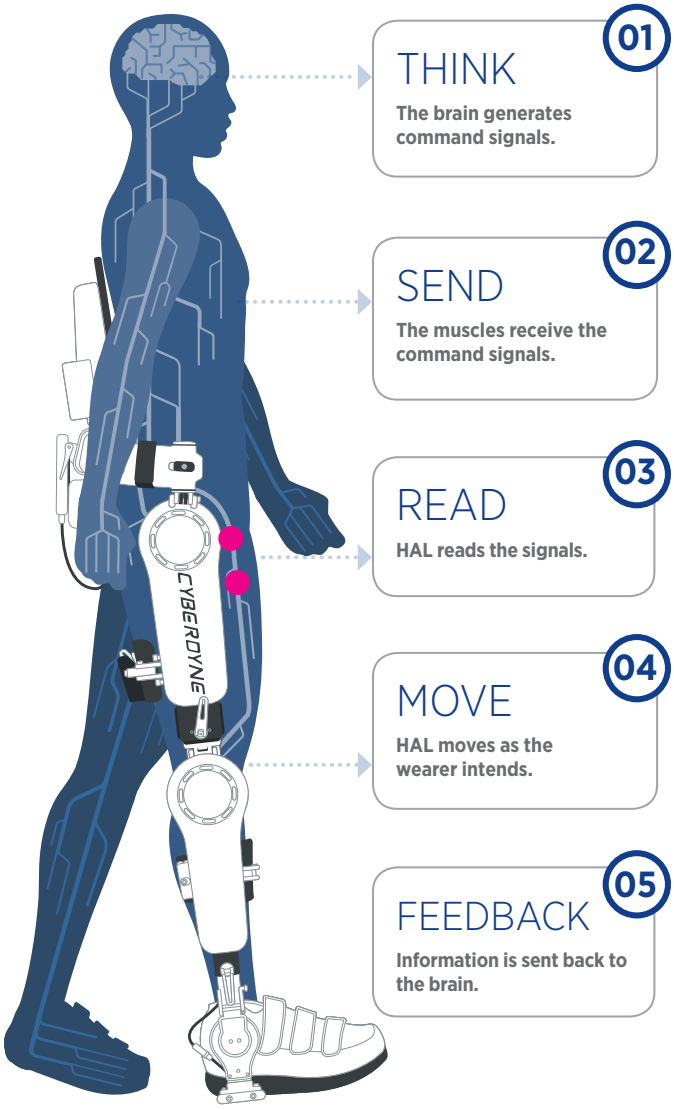
HOW DOES HAL WORK?

For a person with a spinal cord injury, command signals from the brain to the motor nerves and through the muscles are interrupted, so the desired movement doesn't happen. However, there can still be faint bio-electric signals detectable on the surface of the skin. In conjunction with trained medical professionals such as physicians or physical therapists, the HAL exoskeleton is programmed to detect these signals, which reflect the intention for movement. Thus, the wearer is able to neurologically control the HAL equipment. The assisting medical professionals can adjust HAL settings to amplify weak signals and focus on desired signals, while use of a secondary biofeedback feature allows the wearer to see and adjust the signals they are producing.

When Maverick began his HAL treatment, control was difficult at first. "All of his muscles were firing at once. He had to learn to control the movement of specific muscles at specific times," said Meghan Kettles, PT, DPT, MHS, his main Brooks Cyberdyne therapist. Within a few sessions, Maverick started having sensations in his legs. As therapy continued, the sensations became more consistent. He was able to feel touch and temperature. He also regained bowel and bladder sensation. "I am so excited about HAL because I am controlling the suit's movements, compared to other exoskeletons where I was a passenger. It's a great experience to have and see your legs move under your control," said Maverick.

This active use of neural pathways for voluntary movement, with feedback to the brain, is what makes HAL technology at Brooks unique from any other treatment currently offered.

BROOKS® CYBERNIC TREATMENT CENTER



THE BROOKS CYBERNIC TREATMENT CENTER

Located within the Brooks Rehabilitation Hospital, the Brooks Cybernic Treatment Center is open to patients worldwide. The program protocol includes 60 daily sessions over three months with Brooks' specially-trained physical therapy team. Patients who participate can also choose to share their treatment data for clinical research trials. These trials will further evaluate the benefits of HAL interventions and future improvement opportunities.

"We are thrilled to have this unique technology available at Brooks Rehabilitation as it opens the door to more research and treatment methods in advancing spinal cord injury treatment," said Dr. Geneva Tonuzi, medical director of the Brooks Cybernic Treatment Center.

"I've had improvements in my endurance, respiratory function, leg control and changes in sensation. Since my injury, I have made the most gains in the shortest period of time since starting therapy with HAL, and it has given me so much hope for recovery," said Maverick, who began a second 60-session protocol.

"The ultimate goal of HAL treatment is to improve walking when not wearing the robot," said Cyberdyne therapist Jessica Dunn, PT, DPT, NCS.

CYBERNICS – A COMPLETE INTEGRATION

Cybernics is a new academic field centered on cybernetics, mechatronics and informatics fused with various other fields, including brain/neuroscience, robotics, biology, behavioral science, psychology, law, ethics and business administration. In short, Cybernics is the integration of human, robotics and information systems.

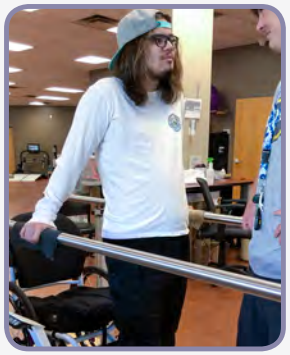
Since its establishment as a venture company with the University of Tsukuba in 2004, Cyberdyne, Inc., has promoted the comprehensive development of various Cybernic Systems that take technology from research and development to social use. HAL has been implemented in Japan, Germany and other countries. The University of Tsukuba is one of the oldest and most comprehensive research universities in Japan.

Dr. Yoshiyuki Sankai, president and CEO of Cyberdyne, Inc., and professor at the University of Tsukuba, is the driving force behind Cyberdyne and HAL. "Wearing HAL leads to a fusion of human, robot and information systems," said Sankai. "I'm pleased that Cybernic Technology will now benefit patients in the U.S., helping to improve their walking ability as well as gain other functional and physiological benefits."

Recent HAL Patients

BROOKS® CYBERNIC TREATMENT CENTER

A careless driver seriously injured **Derrik Amaral**, and his original doctors thought he would never use his legs again. Proving them wrong, Derrik has learned to use his muscles to take controlled steps, all while improving his posture and increasing his walking speed. He now uses only a walker at home, no longer needing his wheelchair.



Injured in 2017 while snowboarding, **George Gonzalez** had little hope of walking again. After completing 60 HAL sessions, George was able to walk without support. He was also able to go from a seated position to standing on his own and walking unassisted with a walker.

A spinal cord injury 40 years ago left **Jerry Gibbons** with crutches, a short stride and dragging feet. With HAL, Jerry has increased his walking speed, stride and the ability to raise his feet, all while reducing his need for crutches. Importantly, he has improved his balance and reduced his risk of falling.

A post-surgery spinal cord infection left Bolivian citizen **Carla Gonzalez** without feeling in her legs. Traveling to Jacksonville, Fla., to be a part of the HAL program, Carla improved her posture and increased her walking speed and distance. She succeeded in her goal to walk down the aisle at her nephew's wedding with just her husband on her arm.

Learn more

For more information on HAL, the Brooks Cybernic Treatment Center team and our Cyberdyne, Inc., partnership, visit **brookscyberdyne.org**.

Scan this code to watch video on Cyberdyne >>

If using iPhone, open your camera to take a photo. If using Android, you will need a QR code reader.

Scan me

Excellence in Education

The Brooks Institute of Higher Learning (IHL) expands the reach of our clinical and professional programs by offering continuing education, clinical student internship, residency and fellowship programs to the greater healthcare community.

CONTINUING EDUCATION COURSES

The Brooks IHL offers a robust schedule of continuing education courses designed to keep rehabilitation professionals up to date on the best practices in their field. A full list of course offerings are available for various disciplines, including RN, OT, COTA/OTA, PT, PTA and SLP. Brooks IHL offers over 40 courses that cover multiple specialty areas including: orthopaedics, neurology, women's health, geriatrics and pediatrics.

RESIDENCY EDUCATION TRAINING

The Brooks IHL currently offers seven residency programs in orthopaedics, neurology PT, women's health, pediatrics, sports and geriatrics, credentialed by the American Board of Physical Therapy Residency and Fellowship Education (ABPTRFE).

FELLOWSHIP EDUCATION TRAINING

The Brooks IHL offers fellowship education for PTs, which is the highest level of post-professional clinical training that builds upon the knowledge gained in a residency and provides advanced sub-specialization in a particular area.

Our ABPTRFE accredited **Orthopaedic Manual Physical Therapy Fellowship** is based on the pillars of clinical competence, education, scholarly clinical practice, professionalism and practice management. The fellowship provides a highly focused educational experience for individuals interested in attaining advanced specialized skills in OMPT.

Brooks also provides an OT Neurologic Fellowship program, which is recognized by the American Occupational Therapy Association (AOTA).

CLINICAL STUDENT INTERNSHIP

The Brooks Clinical Student Internship program provides mentoring and patient-based learning opportunities to PT/PTA, OT/OTA, SLP, exercise physiology, recreational therapy, and case management students. Depending on discipline, students can complete an internship at one of Brooks Rehabilitation's care settings including: inpatient rehabilitation, outpatient therapy, skilled nursing, assisted living, memory care or within our community health programs.

Brooks offers many specialties that students can experience to better prepare them for graduation. Upon graduation, many clinical student interns have been accepted to one of the Brooks IHL Residency programs, while others are gainfully employed by Brooks Rehabilitation.

BROOKS® Rehabilitation
INSTITUTE OF HIGHER LEARNING

For more information about upcoming classes, or to apply to our residency, fellowship or internship programs, please visit brooksihl.org.

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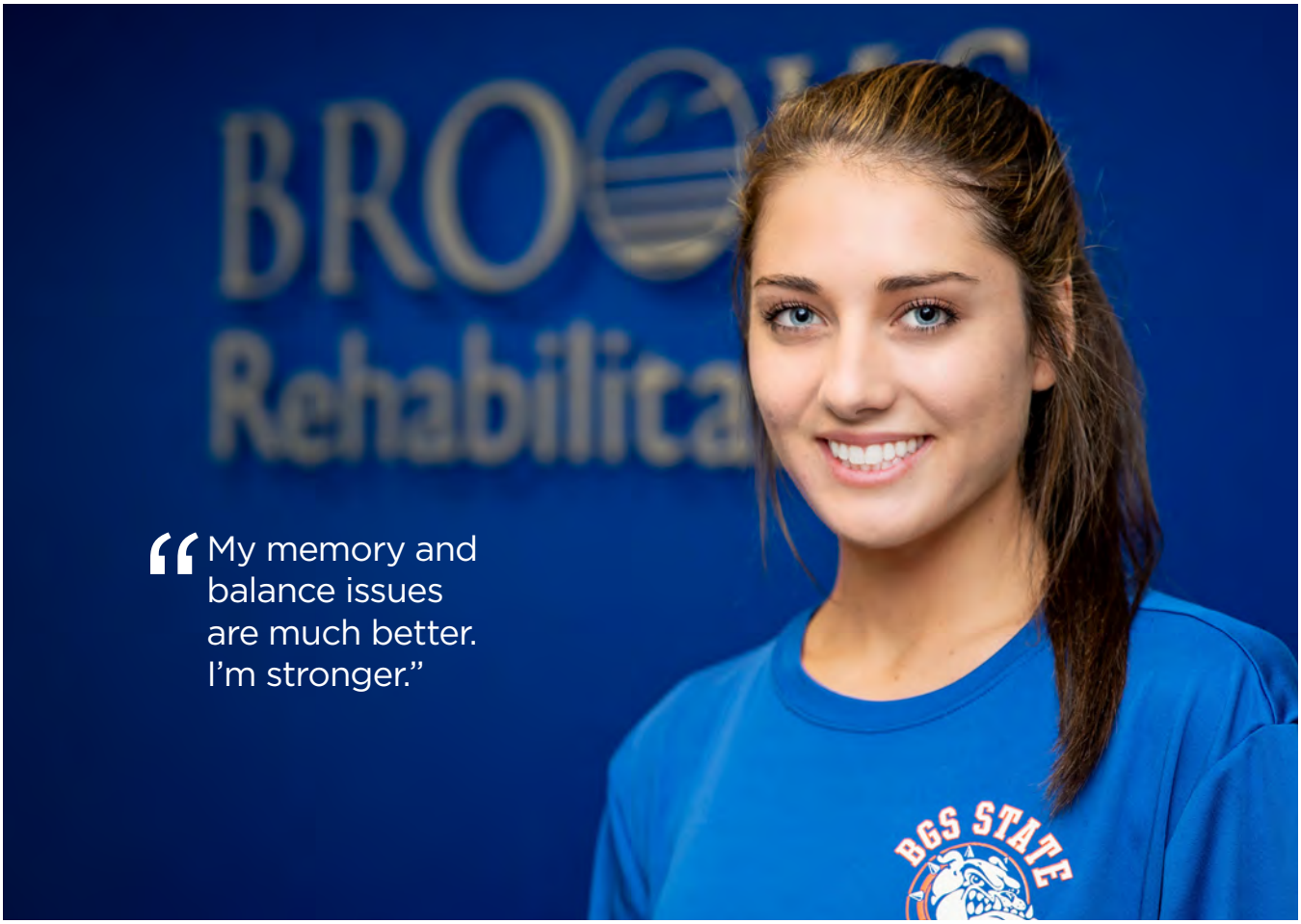
Cassidy Wasdin



During soccer practice in 2012, **Cassidy Wasdin** was knocked down. She was assessed on the sideline but didn't have traditional concussion symptoms. Two nights later at the dinner table, Cassidy couldn't get words out. She wasn't able to follow directions and was nauseous. Her mother took her to the emergency room where she was diagnosed with a headache. Her symptoms improved but never fully went away.

In November 2016, Cassidy had her second concussion. "Her whole personality changed. She wasn't even the same girl anymore. It broke my heart to see her like that," said Cassidy's mother, Darlene. Luckily, Cassidy was able to rest over the holiday break, and after five-and-a-half weeks she was released back to sports.

Cassidy worked hard in school and in soccer. Not only was she able to return to the sport she loved, her talent on the field earned her a full scholarship to college.

On April 15, 2018, during a game against a rival team, Cassidy was diving to block a goal and was kicked in the eye. She thought she was ok and tried to stay in the game, but her eye swelled up and she lost focus.

"I was only able to attend half days at school. I would go to two or three classes and then have to leave. I would read a sentence and couldn't remember what I just read once I was finished," said Cassidy.

Darlene knew Cassidy was going to need additional help and brought her to the Brooks Concussion Program. The program provides a multidisciplinary approach for improving patient outcomes and includes physician evaluations, neuropsychological consultations and testing, as well as therapies for common post-concussion symptoms such as dizziness and headaches.

"My memory and balance issues are much better. I'm stronger," said Cassidy. She improved so much with help from her Brooks concussion team that she was able to start college as scheduled this fall. She isn't yet sure about soccer. Right now, her main focus is continuing to make improvements.


ARETECH
BEAST
EXIT
WOODWAY
WOODWAY

Rehabilitation Research

Most people associate Brooks Rehabilitation with our many public-facing services, programs and locations, but they are unaware that research is an important and growing area for us. "By contributing to rehabilitation science, Brooks is part of the cutting edge," says Dr. Raine Osborne, PT, DPT, OCS, FAAOMPT, director of the Brooks Rehabilitation Clinical Research Center. "Conducting research is valuable for our clinical staff and draws top talent to Brooks. The advanced knowledge and innovative technology resulting from our research will mean better care for our patients."

Research had its start at Brooks in 1999, when researchers from the University of Florida College of Public Health and Health Professions (UF-PHHP) began conducting research at Brooks. The Brooks Rehabilitation Clinical Research Center formed as its own entity in 2010. In 2013, Brooks and UF established a formal partnership agreement – the Brooks/UF-PHHP Research Collaboration – for research at both sites, and recently renewed the agreement for another five years. "To date, the Brooks/UF-PHHP Research Collaboration has generated more than 100 publications and $4 million in grants," says Osborne.

The benefits of merging the strengths of a major academic research institution with those of a comprehensive rehabilitation system cannot be stressed enough, according to Dr. Osborne. "UF has the science expertise and infrastructure to support high-quality, high-impact research. Brooks has the clinical expertise and a large and diverse patient population. We provide a pathway for the more rapid translation of research into clinical practice," says Osborne.

Research performed at Brooks is already having an impact on patient care:

- Studies by Brooks/UF-PHHP research scientists Jason Beneciuk, PT, DPT, PhD, MPH, and Joel Biaolsky, PT, PhD, have helped Brooks clinicians identify patients' at risk for developing chronic pain and tailor individualized treatment strategies for them.
- Brooks/UF-PHHP research scientist Emily Fox, PT, DPT, PhD, NCS, and Brooks' clinician-scientist Kathryn Cavka, PT, DPT, NCS, are conducting research to help individuals with spinal cord injuries improve their breathing ability and wean off mechanical ventilators more quickly.
- Dorian Rose, PT, PhD, another Brooks/UF-PHHP research scientist, and Brooks neuromuscular research program coordinator Lou Demark, PT, DPT, NCS, have developed a backwards walking treatment to improve walking and reduce falls after a stroke. Brooks clinicians are starting to use this promising treatment in clinical practice.

Creating a relationship between clinical practice and research is an important focus of the Brooks Clinical Research Center. "Engaging clinicians in the process generates better research and the opportunity to apply that research in practice more quickly," says Osborne. "Through the Brook/UF-PHHP Research Collaboration and Brooks-sponsored grants, our clinicians have a variety of opportunities to advance new ideas, serve as members of research teams and ultimately contribute to rehabilitation science."

Dr. Osborne also familiarizes newer rehabilitation professionals with research in his roles as a faculty member for the Brooks Institute of Higher Learning and as an adjunct professor at the University of North Florida (UNF). "It's important that new clinicians understand how research is formulated and conducted," says Osborne. "They will become 'consumers of research' in their careers. If they understand how to think of their clinical questions in terms of research questions, they will be more efficient and successful in finding the answers they need."

What does the near future hold for rehabilitation science? "Predicting outcomes using 'big data' comes to mind first," says Osborne. "If our patient has certain symptoms and characteristics, what outcomes can we expect based upon thousands and thousands of records documenting similar situations? I also believe technology as part of care delivery will come under greater scrutiny. How and when is technology necessarily better? How do we use it properly and who benefits from it?" The Brooks Rehabilitation Clinical Research Center will continue expanding the knowledge of rehabilitation science, technology and clinical practice. "I enjoy coming to work every day," says Osborne. "Research is all about constant learning – and that really excites me."

Dr. Osborne completed his physical therapy training at the University of South Florida and his residency and fellowship training in orthopaedic manual physical therapy at Brooks Rehabilitation Institute of Higher Learning. He is currently completing his doctorate in educational leadership at UNF. Learn more about research at Brooks at brooksrehab.org/research.

Our Current Research 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

Cyberdyne Study: In partnership with the Brooks Cybernic Treatment Center, this study examines the safety and efficacy of locomotor training using adaptive robotics in adults with chronic spinal cord injury.

DoD Intermittent Hypoxia 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.

Transcutaneous Spinal Direct Current Stimulation to Enhance Locomotion after Spinal Cord Injury: This study will examine if transcutaneous spinal direct current stimulation, applied during 16 sessions of locomotor training, will improve muscle activation, lower limb kinematic and functional walking outcomes in adults with chronic spinal cord injury.

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 Mayo Clinic.

LOW BACK PAIN

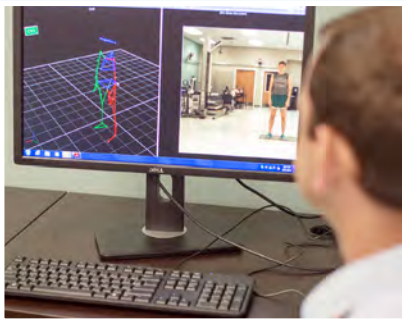
Low Back Pain – Neural Processing Study: This study will provide a better understanding of the neural mechanisms of low back pain and how these factors interact to impact function.

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.

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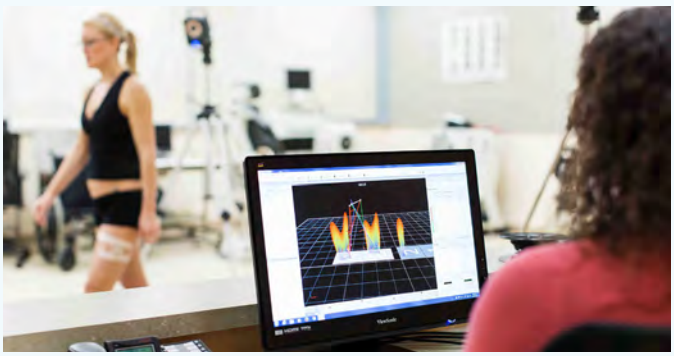


PATIENT HIGHLIGHT

Nancy Hansen

When **Nancy Hansen** experienced complications from minor gall bladder surgery, she was readmitted to the hospital numerous times. Each release required home health care.

Nancy’s husband, Roger, became her constant caregiver and devoted guardian during her months-long medical and emotional journey. Roger, like most people, had no training or experience helping a loved one back to health.

“When I was released from the hospital after the gall bladder surgery, and soon afterwards needed care for infections and lung issues, I didn’t know how Roger and I would handle it. So, when my primary doctor told us about Brooks home health services, it was the best phone call we’d ever received!” said Nancy. “I wouldn’t be alive if we hadn’t connected with the Brooks physical and occupational therapists and nurses.”

Roger chimes in when Nancy sings the praises of her Brooks care team. He passionately described how their lives changed when Nancy began her first at-home therapy.

“Nancy was home a short time after the initial gall bladder surgery when she started to have some problems,” said Roger. “As soon as our Brooks therapist and nurse saw Nancy, they told me to take her to the emergency room. This difficult scenario played out several times as Nancy was readmitted and released. I am so thankful for their personal guidance. They looked at Nancy like a family member, not just another patient or a number.”

Each time the Brooks team visited their home, they showed Roger how to do various exercises to keep her active.

“Through all the ups and downs of my repeated hospitalizations, I just wanted to get better and get back into my normal life,” said Nancy. “Having the Brooks therapists train Roger and help us cope with this difficult time was wonderful. When they’d arrive, I felt like I was getting a visit from friends, not therapists.”

Recently, Nancy went on an overnight bus trip with her quilting group…without Roger. They were so happy she could finally be independent and do something she enjoyed, without worrying about her health.

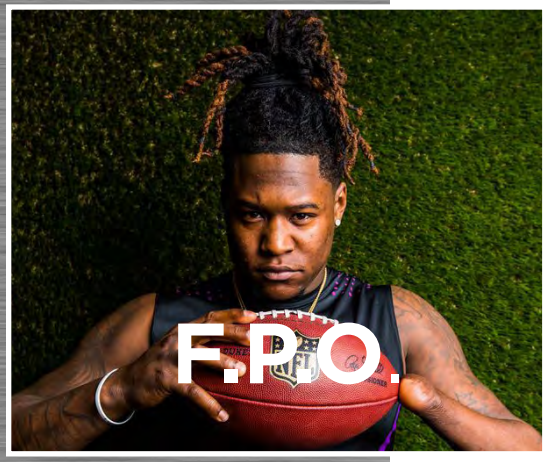
“We both felt at ease when I went on the trip because we knew we had the best possible care behind us,” said Nancy. “Peace of mind is worth more than anything.”

Save the Date

35th Annual Brooks Rehabilitation Golf Classic
Friday, Nov. 2, 2018
Deerwood Country Club, Jacksonville, Fla.

35th Annual Brooks Rehabilitation GOLF CLASSIC
When you play, everyone wins.

The Brooks Golf Classic is one of the top charity golf tournaments in Northeast Florida, with approximately 150 corporate and community leaders participating. All proceeds of the tournament benefit the programs and services of Brooks Rehabilitation focused on the care of patients who have sustained brain injuries, strokes, spinal cord injuries, comprehensive orthopedic problems, and other disabling conditions. You are invited to join us at the stunning Deerwood golf course for an exciting day of fun, camaraderie and great golf! For more information and sponsorship opportunities, please visit **brooksgolf.org**.



Celebrate Independence
Saturday, February 09, 2019
Jacksonville, Fla.

CELEBRATE INDEPENDENCE

Celebrate Independence is a day of inspiring individuals, exciting demonstrations and valuable information – all in the name of living life to its fullest. Our special guest will be Shaquem Griffin, linebacker for the Seattle Seahawks. Shaquem was born with amniotic band syndrome which caused the fingers on his left hand not to fully develop. At age four, his hand was amputated. Shaquem never let that stop him from following his dreams. He played football for the University of Central Florida along with his twin brother Shaquill. Shaquem reunited with Shaquill when he was drafted by the Seahawks, making him the first NFL player with one hand. Shaquem will share his story of determination and perseverance against all odds. For more information, please visit **BrooksCelebrate.org**.

Par-Tee for Adaptive Sports and Recreation
Saturday, May 4, 2019
Topgolf Jacksonville, Fla.

PAR-TEE

The Par-Tee for Adaptive Sports and Recreation is an exciting and engaging fundraiser that benefits the athletes and community participants within our program. Brooks Adaptive Sports and Recreation was created as a community resource for individuals of all ages and abilities. The program hosts a variety of weekly activities and monthly special events that provide an opportunity for both social engagement and physical activity.

Our 2018 Par-Tee event at Topgolf Jacksonville raised over $145,000 for this life-changing program. We'd like to thank our sponsors and guests for their generous support and for their belief in our vision of enhancing life through sports and recreation. For more information, visit **thepartee.org**.

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BROOKS REHABILITATION

NEW AND IMPROVED WEBSITE

We are excited to announce that as of Oct. 26, there is a new **BrooksRehab.org**! The new website focuses on the patient experience to help identify needs and solutions that Brooks can offer throughout the rehabilitation journey.

Explore the new website at BrooksRehab.org.

Scan me