U.S. NEWS & WORLD REPORT'S **NO. 1 PHYSICAL THERAPY** PROGRAM

FALL 2016

INmotion

THE OFFICIAL PUBLICATION OF ... GY AND PHYSICAL THERAPY

VIRTUALLY HEALED

Researchers earn grant to develop virtual reality-based walking rehab program.

THE WALKING MIRACLE

Meet the man who defied expectations and beat flesh-eating bacteria, thanks in part to the care provided by the USC's wound care physical therapy team.

PHYSICAL THERAPISTS TO PROFESSIONAL ATHLETES

Which alumni have landed high-profile jobs in the sports world?

MOVING FORWARD

BREAST CANCER SURVIVORS GAIN BACK THEIR HEALTH THROUGH EXERCISE

U.S. NEWS & WORLD REPORT'S **NO. 1 PHYSICAL THERAPY** PROGRAM

FALL 2016

INmotion

THE OFFICIAL PUBLICATION OF THE USC DIVISION OF PHYSIOLOGY AND PHYSICAL THERAPY

U.S. NEWS & WORLD REPORT'S **NO. 1 PHYSICAL THERAPY** PROGRAM

FALL 2016

INmotion

THE OFFICIAL PUBLICATION OF THE USC DIVISION OF PHYSIOLOGY AND PHYSICAL THERAPY

FUN IN THE SUN

They fought cancer and won. The key to staying well afterward is to maintain a healthy weight, eat nutritious foods and exercise at least 150 minutes every week, according to the American Cancer Society.

It is with this in mind that the division, in partnership with the USC Norris Comprehensive Cancer Center, holds weekly *Adelante* (Spanish for "moving forward") exercise classes. The free classes take place Fridays from 1 to 2 p.m. at the Wellness Center's dance studio.

Assistant professor of clinical physical therapy Kimiko Yamada DPT '06 and second-year doctor of physical therapy students make sure participants maintain proper form during different weekly activities such as yoga, zumba, tai chi as well as balance and posture exercises. The progam not only provides physical benefits but also the emotional and psychosocial benefits necessary for cancer survivors to lead the healthy, happy and long lives they fought so valiantly for.

PHOTO BY CHRISTINA GANDOLFO

PHOTO BY JOHN SKALICKY

"*inMotion* is in motion"

This issue of *inMotion* marks a major step forward for our division's magazine as we move to an all-digital edition, available to read on your computer, tablet or phone.

There are two main reason for this shift in publishing strategy. First, we can distribute *inMotion* to a much larger audience with this platform. As our circulation numbers have grown, the costs to print and distribute *inMotion* have become prohibitive. In the past year or two, we have had to make hard decisions about how much we could continue to expand the mailing list. The beauty of the digital edition, of course, is that printing costs are eliminated and distribution costs are minimal. This leads to the second reason for the switch: We believe that we can put out a more interesting and dynamic magazine in a digital edition. Not only can we devote more resources to the quality of the publication, but the digital platform itself provides opportunities for creative use of multimedia. We can easily add video as well as links to previous issues and other articles on the web. We will also be able to link to *inMotion* from our website and social media sites. Indeed, readers will be able to share articles from *inMotion* with others through a variety of platforms, from email to Facebook and Twitter.

We will all miss the paper version of *inMotion*. In the past few years, its quality has been impressive, something to be very proud of. Let's face it, it's nice to hold a good quality magazine in your hands. Nevertheless, the handwriting is on the wall for paper publications — from newspapers and magazines to popular novels and scientific textbooks. There is no question that the move from paper to digital is inexorable, and it is gaining momentum. Most of us now read news and articles of interest to us on our computers, our tablets and, increasingly, our phones. If you read *inMotion* regularly, you probably know that our DPT program is fully digital. All students are required to have iPads, and all materials (handouts, etc.) are distributed electronically. Even exams are administered on an electronic platform. It has been our experience that having reading materials at your fingertips, so to speak, has increased the accessibility of those readings. You can read them when you have time to read them, not just when you are in proximity to the paper copy. Thus, by moving to digital not only will we reach a much larger audience, but, more importantly, people will read more of the articles.

We expect that it will take us a few issues to work out the kinks. So please bear with us. If you have suggestions, comments or criticisms, please let us know at *ptcomm@usc.edu*. The most important step you can take is to download the *inMotion* app to your laptop, iPad or phone (better yet, all 3). To do so, go to Amazon, Google Play or iTunes (depending on your device) and search for the publication, using the search terms, "USC physical therapy magazine." Hit download and begin enjoying the multimedia content immediately.

James Gordon

Associate Dean and Chair,
USC Division of Biokinesiology & Physical Therapy

COVER STORY

MOVING FORWARD

17-22

BY MICHELLE McCARTHY

The same treatments that might save your life from breast cancer —chemotherapy and radiation therapy — can lead to secondary health complications, including high blood pressure, obesity and high blood sugar. USC physical therapy researcher Christina M. Dieli-Conwright PhD '09 hopes to help survivors stay healthy with a study investigating the effects of a 16-week fitness program on the wellness of these brave breast cancer survivors.

PHOTO BY CHRISTINA GANDOLFO

DEPARTMENTS

INmotion

THE OFFICIAL PUBLICATION OF THE USC DIVISION OF BIOKINESIOLOGY AND PHYSICAL THERAPY | FALL 2016

ASSOCIATE DEAN AND CHAIR
JAMES GORDON

DEAN
AVISHAI SADAN

EDITOR
JOHN HOBBS MA '14

DESIGN
JOHN HOBBS MA '14
GARETT YOSHIDA

CONTRIBUTORS
STEPHANIE CORRAL
CHRISTINA DIGGS DPT '16
BREANNE GRADY MCM '10
JOHN HOBBS MA '14
MICHELLE McCARTHY
CALEN OUELLETTE
YASMINE PEZESHKPOUR MCM '16
CHRISTOPHER POWERS PHD '96
JAMIE WETHERBE MA '04

PHOTOGRAPHY
CHRISTINA GANDOLFO
NATE JENSEN
JOHN SKALICKY

PHOTOGRAPHY ASSISTANT
MARIA PICASO

COVER PHOTOGRAPHY
CHRISTINA GANDOLFO
CGANDOLFO.COM

inMotion is published twice yearly. For questions, comments, updates or story suggestions, contact us at *ptcomm@usc.edu*.

USC

FEATURES

CONTRIBUTORS

STEPHANIE CORRAL
Stephanie Corral is a new media journalist at College of the Canyons. Her writing has been published in *Los Angeles* magazine, *Kinfolk*, *Freunde von Freunden* and the *Los Angeles Times*. Born and raised in Los Angeles, she graduated from California State University, Northridge with a bachelor's degree in journalism. In 2009, she moved to Madrid to teach English for a year, which turned into three years. She considers the Spanish capital her second home. In her free time, she enjoys reading, hiking, baking, archery and planning the next adventure to keep her restlessness at bay.

CHRISTINA DIGGS
Christina Diggs is a graduate of the USC DPT Class of 2016. The Atlanta-native attended the University of Alabama at Birmingham where she received her bachelor's degree in psychology with a minor in chemistry. When she is not working as a physical therapist at the California Hospital Medical Center, she enjoys volunteering with the Beauty Bus foundation. Christina also enjoys reading, cycling, hiking and spending time with friends and family. In this issue, she shares a patient story that really inspired her as she begins her career as a physical therapist.

MICHELLE McCARTHY
Michelle McCarthy has been writing and editing for the online and consumer publishing industry for more than 20 years and holds a bachelor's degree in journalism from California State University, Northridge. She has been a contributing writer for the *Los Angeles Times*, the *Hollywood Reporter*, the *Advocate*, *OC Weekly* and CBS Radio, reporting on everything from nonprofit work to the world's most tattooed man. She has also worked in the public relations department at Showtime Networks and currently serves as a managing editor at the Enthusiast Network.

Winstein leads effort to develop first-ever stroke rehab guidelines

BY BREANNE GRADY MCM '10

Every year, 800,000 Americans suffer a stroke. Of that, more than 80 percent survive — many with some degree of disability.

Traditional treatment methods have focused on acute short-term outcomes, with little guidance on the effectiveness of rehabilitation strategies on long-term outcomes for adult stroke survivors — until now.

The American Heart Association/American Stroke Association (AHA/ASA) has issued evidence-based strategies to help improve outcomes for adult stroke survivors.

This "how-to" manual recommends a comprehensive post-acute care strategy in the aftermath of a stroke.

"Previous guidelines have focused on the medical issues involved in the initial management of stroke, but many people survive a stroke with some level of disability," said Carolee Winstein MS '84, PhD, professor at the USC Division of Biokinesiology and Physical Therapy and lead author of the guidelines. "There is increasing evidence that rehabilitation can have a big impact on the survivors' quality of life, so the time is right to review the evidence in this complex field and highlight effective and important aspects of rehabilitation."

In the statement, the associations recommend that stroke survivors seek treatment when possible in an in-patient rehabilitation facility (IRF) as opposed to a skilled nursing facility. While in an IRF, a patient typically participates in three hours of rehabilitation each day with an integrated team of health professionals, including physical therapists, occupational therapists, speech therapists, health aides, psychologists, nurses, nutritionists and social workers.

"There is considerable evidence that patients benefit from the team approach in a facility that understands the importance of rehabilitation during the early period after a stroke," Winstein said.

Caregivers should also advocate that stroke survivors not be discharged until they have participated in a formal falls-prevention program, which includes education on removing fall risks from the home, being aware of medication side effects and learning to safely operate assistive devices like wheelchairs and canes.

Both recommendations have been backed by several high-quality studies, and the AHA/ASA have ranked the level of scientific evidence supporting them as "strong."

Other new guidelines include:

- Rehab should include intense mobility-task training for stroke patients with walking limitations.
- Stroke survivors should be given individually tailored exercise programs to improve their cardiovascular fitness after rehabilitation.
- Patients should be provided intellectually stimulating environments, with access to computers, books, music, etc.
- Patients with impaired speech should be offered speech therapy.
- Eye exercises should be given to patients with impaired eye coordination and focus.
- Stroke survivors with balance issues should be provided a balance training program.

Winstein has been with the division since 1990. She has a dual appointment with the neurology department at the Keck School of Medicine of USC. She has written more than 100 research articles and book chapters, with a focus on neurological rehabilitation, and is the director of the Motor Behavior and Neurorehabilitation Lab.

Winstein served as the chair of an expert writing team that put together these guidelines, which were published May 4 in the journal *Stroke*, which has an impact factor of 5.7.

Finley, Fisher awarded $450K grant to develop VR-based system for walking rehabilitation

Award allows researchers to develop safe, effective game-based treatment for individuals with Parkinson's disease.

BY JOHN HOBBS MA '14

A trip to the physical therapist could soon feel a bit more like a trip to the arcade, thanks to a new multidisciplinary study being conducted at USC.

James Finley and Beth Fisher of the USC Division of Biokinesiology and Physical Therapy and Marientina Gotsis of the USC School of Cinematic Arts have received a two-year grant from the National Institutes of Health to develop and test a virtual reality (VR)-based program for walking rehabilitation in patients with Parkinson's disease.

Symptoms such as stiffness, shaking and balance problems can cause people with the degenerative brain disorder to have difficulty walking. Traditional physical therapies have centered around strength training, stretching and movement practice, but it was recently discovered that those strategies may not lead to long-term motor learning by themselves.

"From a motor-learning perspective, we now know that learning and long-term retention are optimized when the patients have a focus on the movement's effect on the environment such as 'step over the obstacle' rather than on performing the movement itself — 'flex your hip,'" explained Fisher, professor of clinical physical therapy and director of the Neuroplasticity and Imaging Laboratory.

ON YOUR FEET

The proposed VR-based system would get individuals with Parkinson's back on their feet, practicing the actual walking skills necessary to navigate their communities — with seemingly real-world feedback — all while under the watchful eye of a physical therapist.

"We will be designing a system that will allow patients to experience and practice challenging tasks like negotiating obstacles, walking through crowds, doing turns and walking over thresholds to represent the challenges they would experience in the physical world," said Finley, assistant professor and director of the Locomotor Control Laboratory.

A typical treatment session would involve a patient wearing a VR headset and walking on a standard or omni-directional treadmill or over the ground to improve their walking ability in a way that feels more like playing a video game.

"With motor rehabilitation, one of the things patients need is lots of repetition," Finley said. "One of the advantages of doing something like a game is it helps increase motivation to undergo the amount of practice necessary for skill learning."

During the study's first phase, the researchers will be designing prototypes of a low-cost, portable gait-training system that can be set up and easily used in the physical therapy office.

"Clinicians have a very limited time with their patients so any hurdles or barriers that are introduced by technology can limit the actual use of that technology in the clinic," Finley said.

The researchers will then recruit clinicians and their patients to use the system, offering feedback to improve the experience for both the user and the supervising physical therapist.

INTO THE VIRTUAL WORLD

Gotsis and her team of researchers at the USC Creative Media and Behavioral Health Center will design and assess the VR experience — paying close attention to the tiniest of nuances, including sound and haptic feedback — to ensure the most life-like simulations.

"We would like to create a pleasurable, safe and challenging walking virtual reality experience," Gotsis said. "We will know from participant input if the experience is enjoyable, and our collaborators will help us understand whether the experience is challenging enough to promote neuroplasticity."

Patients will have the choice of different environments, including a cityscape with high rises, a seaside pier with a Ferris wheel, a path in a park or a visit to Trader Joe's. To be most effective, users should choose environments that reflect the challenges they most often face in the real world, Finley said.

The study's second phase will involve assessing the treatment strategy's effectiveness on actual patients. Using the developed environments, patients with Parkinson's will complete a set of progressive training sessions while researchers determine the program's efficacy.

"When it comes to imagining the future of health care, we cannot afford to leave it all to the imagination of a single expert group," said Gotsis, referring to the power of multidisciplinary approaches to solve some of society's most vexing problems. "Nobody knows best. We're all stakeholders in creating new therapies whether they use virtual reality or paper clips and glue."

Research was supported by the Eunice Kennedy Shriver National Institute of Child Health and Human Development of the National Institutes of Health (award number R21HD088342).

IN BRIEF

DIVISION PARTNERS WITH THE USC GLORYA KAUFMAN SCHOOL OF DANCE

The division has forged a unique partnership with the USC Glorya Kaufman School of Dance to provide physical therapy to dance school students. While the terms of the partnership are still under development, the current plan is for USC physical therapists to provide screenings, evaluations, preventive care and performance enhancement services for the dancers. The program, based out of the division's faculty practice on the University Park Campus, will be overseen by division faculty members Aimee Diaz and Erin Hayden DPT '06. It was created with hopes of improving the dancers' well-being and the longevity of their careers by exposing them to high-quality physical therapy — all while further expanding dance physical therapy studies at the division.

ASSISTANT PROFESSOR RECEIVES FUNDING TO INVESTIGATE INTERSTITIAL CYSTITIS

Jason Kutch was recently awarded a $50,000 research grant from the Interstitial Cystitis Association for his study investigating whether transcranial magnetic stimulation (TMS) can be used to successfully treat interstitial cystitis (IC). Affecting anywhere from 4 to 12 million people, IC can cause pelvic pain as well as bladder pressure and pain. Kutch believes IC may be caused by "faulty wiring" between parts of the brain and the pelvic floor muscles. To test his hypothesis, he and his team will use TMS, a non-invasive treatment currently used for depression, to activate certain brain areas with magnetic fields to see if they can make them work better. "As a chronic pelvic pain sufferer, I know how important it is to come up with better treatments," Kutch says. "The goal of the project is to turn the science into a potential treatment."

DPT STUDENTS WIN APTA STUDENT ADVOCACY CHALLENGE

For the second consecutive year, USC physical therapy students have won the APTA Student Advocacy Challenge. This year, it was the DPT Class of 2018 who took home the award from the APTA National Student Conclave earlier this fall. The challenge requires students to participate in advocacy activities and submit a report of those activities to APTA's Congressional Affairs department. The reports are then scored based on what activities the student took part in. For example, meeting with a federal legislator garners 30 points while simply emailing or writing a letter earns the student three points. The division curriculum requires all second-year DPT students to have meetings with local, state and federal legislators so that students learn about their role as advocates for the profession and their patients. The winning school gets to select a member of APTA leadership to come speak on advocacy issues related to the profession.

PHYSICAL THERAPY STUDENTS BEGIN ROAD TO DEGREE

USC's doctor of physical therapy class of 2019 donned their white coats for the first time and took their solemn oaths to uphold the noble traditions of the profession at the division's White Coat Ceremony on Aug. 25. The incoming class is comprised of 97 future physical therapy professionals — 56 women and 41 men. They hail from 20 different states as well as China and Canada. There were also seven entering master's of science and four doctor of philosophy students. In addition to welcoming the new classes, the division bid *adieu* to nearly 20 residents who officially finished their residency programs in neurologic, orthopedic, pediatric and sports physical therapy.

SIGWARD, CPTA'S FEATURED RESEARCHER FOR SUMMER 2016

Assistant professor of clinical physical therapy Susan Sigward PhD '04 was highlighted this summer as the "featured researcher" on the CAL-PT Fund website. Sigward received a CAL-PT-Fund grant to conduct a study titled, "Does Early Gait Training Improve Lower Extremity Sagittal Plane Loading Following Anterior Cruciate Ligament Reconstructions?" The study investigates the effects of early rehabilitation on the long-term outcomes of anterior cruciate ligament reconstruction (ACLr). "The persistence of altered knee joint loading during gait and functional activities up to 24 months post-ACLr suggests that current rehabilitation programs are not adequately resolving motor impairments," she said. The study aims to shape early knee loading behaviors using a daily gait training program. It has led to additional funding opportunities to help Sigward describe changes in loading across early rehabilitation and to develop procedures for quantification of daily gait behaviors. Read more about it at *tinyurl.com/sigward*

DIVISION JOINS OCCUPATIONAL THERAPY, PHARMACY STUDENTS FOR INTERPROFESSIONAL STROKE EVENT

Earlier this fall, nearly a dozen physical therapy students joined students from the USC School of Pharmacy, the Keck School of Medicine of USC and the USC Chan Division of Occupational Science and Occupational Therapy for the first ever Interprofessional Stroke Workshop. The student-led event aimed to give the health professions students a better understanding of what their colleagues from other fields would assess in stroke patients. During the workshop, facilitators conducted mock patient interviews, allowing students to ask questions and discuss the case. Afterward, the students collaborated on interview questions to conduct better assessments. "This will help them in referring patients in the future and in providing better care," said event organizer Sarah Baik PharmD. '18.

ETC GOLF THERAPY

Crown Rice wasn't feeling too good about himself.

Like many men his age, he was slightly overweight and had to confront the everyday aches and pains of aging. And like many of his fellow veterans, the 68-year-old retired U.S. Army Specialist, who completed one tour of duty in Vietnam, was dealing with the long-lasting mental effects of combat.

"I was just down and out," explains Rice, who came across a flyer looking for volunteers for a new study investigating the effects of playing golf on the physical, psychosocial and cognitive health of older war veterans.

"I thought, let me try golfing, maybe that will just help me with my morale," he says.

The program, a 12-week intervention run by associate professor George Salem, pairs up veterans with a PGA professional for small-group golf lessons.

"I was really enthusiastic about learning something again, like a little boy trying to learn how to ride his bicycle," Rice explains, with a laugh.

Rice was one of the study's first two participants, with another four currently being recruited. As part of their investigation, researchers are assessing differences in participants' agility, cardiovascular endurance, balance, hip muscle performance, grip strength and more as a result of the intervention.

Salem and his team hope to use this collected information to examine the feasibility, compliance and safety of the golf program, with hopes that their data will eventually lead to the development of senior golf fitness programs.

Golf is an ideal comprehensive exercise activity for seniors, Salem explains. It fosters socialization, is likely to be adhered to and improves concentration and quality of life. Salem hopes his study leads to a greater understanding of these benefits.

After completing the program, Rice says he feels much more serene and mentally focused. He also says he gets around the course a little easier than he used to.

"The study gave me motivation," he adds. "In fact, I'm going to start going to the gym and try to lose some weight."

Learn more about the study or donate by visiting **pt.usc.edu/GolfScience/**

Alumna featured on *GMA* discussing joint health

Division alumna Erica Fritz DPT '10 was highlighted on a recent *Good Morning America* story, sharing with *GMA* viewers the ways to improve joint health to stave off the effects of osteoarthritis, which affects up to 27 million Americans. "The prevailing thought is that if you keep your muscles strong, flexible and in good balance, you're going to prevent abnormal joint stress," said Fritz, who works as the manager of orthopedic physical therapy at New York's Hospital for Special Surgery.

See Fritz on the second video segment at **tinyurl.com/ericafritz-GMA**

RADIO

MANAGING URINARY INCONTINENCE

Wetting your pants is not all that uncommon, according to an audio piece broadcast this past summer on San Francisco public radio. It turns out one in 10 women in their 30s experience it, with the number jumping to three in 10 for women over 60 years old and five in 10 for women over 80, according to the radio story. In the piece, the division's own Aimee Diaz extols the positive role that pelvic floor physical therapy as well as a number of technological gadgets, including an interactive kegel exerciser and your own smart phone, can play in helping women strengthen their pelvic floor muscles to stop urinary leaks. "I think we're only gonna get better at treating these things," said Diaz, an instructor of clinical physical therapy. "But unfortunately it's still something that we're going to have to deal with."

Find out how physical therapy is helping at **tinyurl.com/diaz-pelvic-floor**

DID YOU KNOW?

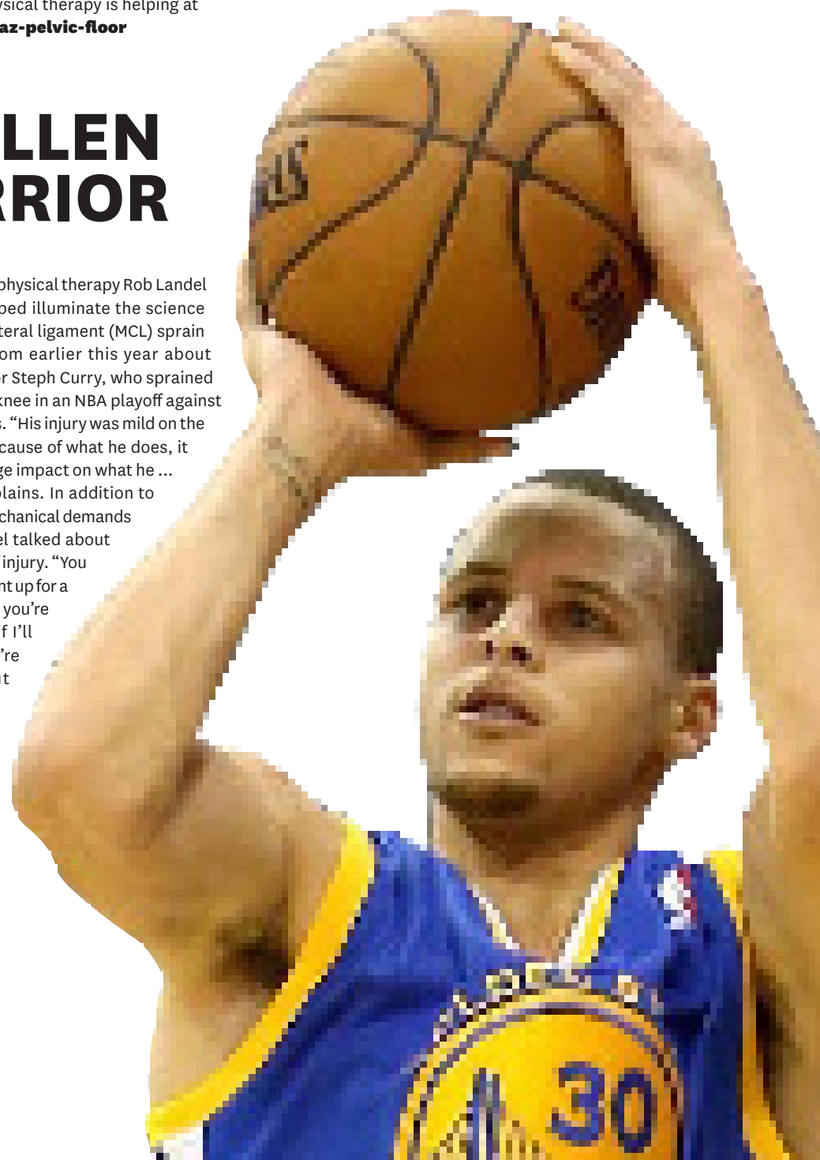
25% of U.S. women have at least one pelvic floor disorder, with urinary incontinence being the most common.

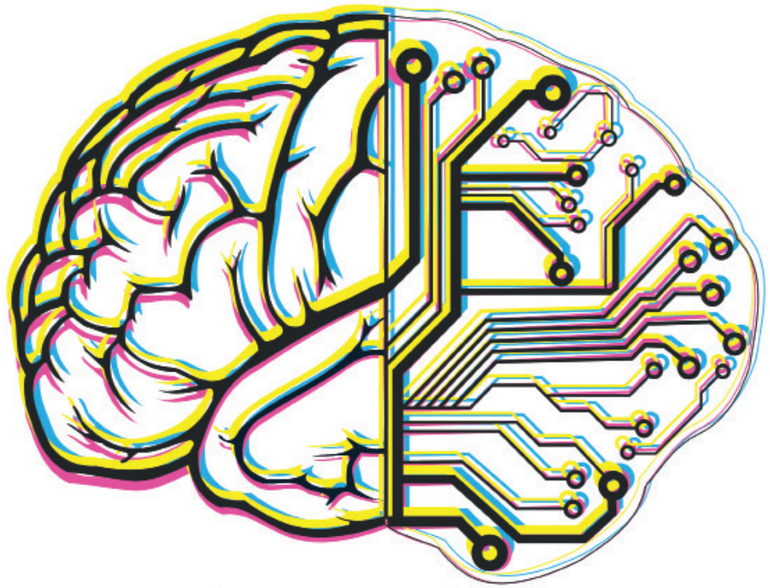
WEB

A FALLEN WARRIOR

Professor of clinical physical therapy Rob Landel MS '84, DPT '96 helped illuminate the science behind medial collateral ligament (MCL) sprain in a *STAT* article from earlier this year about Golden State Warrior Steph Curry, who sprained the MCL in his right knee in an NBA playoff against the Houston Rockets. "His injury was mild on the sprain scale, but because of what he does, it ends up having a huge impact on what he … can do," Landel explains. In addition to explaining the biomechanical demands of basketball, Landel talked about the mental effects of injury. "You can imagine if you went up for a jump shot or a layup, you're thinking 'I wonder if I'll be able to land.' You're not thinking about putting the ball in the bucket."

Read more of Landel's expert analysis at **www.tinyurl.com/landel-on-curry/**





WEB

MIND GAMES

Stroke recovery might look quite different in the near future, thanks to the research of assistant professor Sook-Lei Liew MA '08, PhD '12. The division researcher (with a dual appointment at the USC Chan Division of Occupational Science and Occupational Therapy) uses real-time functional magnetic resonance imaging (fMRI) to provide neuro-feedback while teaching stroke patients how to increase communication between the critical parts of their brains that control movement. The research would essentially teach stroke survivors to use their own thoughts to get their affected limbs moving again. "We would love for people to come for a few real-time fMRI sessions to learn the best strategies for how to control their brain activity and then be able to practice those strategies at home," she says. Liew envisions a future where stroke patients, wearing a low-cost, 3-D printed electroencephalography (EEG) headset, would practice their brain activities at home in their downtime.

Listen to a recent podcast where Liew discusses her work at **tinyurl.com/mindgames2016**

WEB

Data Overload

Should you keep track of workout calorie counts? Associate professor of clinical physical therapy and director of the Clinical Exercise Research Center Todd Schroeder PhD '00 weighed in recently for a *Huffington Post* article. It turns out that number on the treadmill, which is only an estimate to begin with, can feed into a counterproductive mindset where you overestimate calories burned and underestimate calories consumed, leading to weight stagnation or gain, Schroeder says. There's also the entitlement issue. "If [people] think they burned more calories than they did, then they say, 'I can enjoy a Frappuccino because I did a hard workout. That's a big issue," he says.

Read more of Schroeder's fitness tracking advice at **tinyurl.com/schroeder-on-huffington**

WEB

SEAHAWK DOWN

All eyes were on Drew Morcos DPT '07 — and the healing power of physical therapy — earlier this fall when Seattle Seahawks quarterback Russell Wilson took a nasty fall and sprained the medial collateral ligament (MCL) in his left knee. Morcos, a former division faculty member and Wilson's personal physical therapist, sprung to action, heading north to put the temporarily grounded Seahawk through a round-the-clock regimen to get him back on his feet. Just one week later, a custom knee brace-wearing Wilson was not only on the field but also led the Seahawks to victory against the New York Jets.

Read all about the physical therapy intervention at **tinyurl.com/sea-hawk-down**

5 *Things To Know About* Justin Lantz

BY YASMINE PEZESHKPOUR MCM '16

Justin Lantz never envisioned himself as a Southern California resident. It wasn't until the deeply rooted Midwest native received a call from a No. 1 physical therapy program in the nation that he decided to make the move to further his career. Lantz joined the division in 2015 as an instructor of clinical physical therapy and is just getting started helping shape the future of the profession. Here are five things to know about the new faculty member:

1 **HE IS A CHICAGO NATIVE.** Lantz attended Northern Illinois University for his bachelor's degree and Northwestern University for his doctor of physical therapy degree so that he could be close to his family and friends. "I love my city, had great connections, family and friends all in one place, so for school I did not travel too far," Lantz says. He ended up in Los Angeles after a mentor at a Northwestern event told him something that shifted his perception: "You will never reach your full potential unless you step out of your comfort zone." He decided to apply to faculty positions around the country and was thrilled when he received an interview request from USC. The rest is history.

2 **LANTZ IS A FIRST-GENERATION COLLEGE GRADUATE.** When he was in high school, his career aspiration was to open a local gym and coach wrestling. His parents, however, saw great potential in their son who consistently earned good grades. "My parents honestly didn't care what I wanted to become, as long as I could live a life better than theirs and pursue my education," he says. "My other relatives encouraged me to become a physician or surgeon."

3 **BEFORE BECOMING A PHYSICAL THERAPIST, LANTZ WANTED TO BE AN ORTHOPEDIC SURGEON.** He even shadowed a surgeon to learn more about the profession. Lantz eventually realized he was more interested in watching a patient's progress post-surgery. "I did not get to see the day-to-day functional progress of the patient, which I thought was equally as interesting as surgery," he says. "These experiences led me to the field of physical therapy."

4 **LANTZ IS PHYSICAL THERAPIST TO ASSOCIATE DEAN JAMES GORDON.** Instead of buckling under the pressure of providing treatment to "the boss," he says he really enjoys the time he gets to bond with Dr. Gordon over the profession and practice. "I wasn't fired in the middle of treatment, so I guess it went well and got me some 'street cred' at the clinic," he says, with a laugh. "I am glad that I was fortunate enough to be able to get to know him — not only as a boss, but also a friend."

5 **LANTZ IS EXTREMELY PASSIONATE ABOUT THE PROFESSION AND EVENTUALLY WANTS TO GET INVOLVED IN ACADEMIC AND CLINICAL EDUCATION OF STUDENTS.** "We have worked hard as a profession to move from just a certificate in physical therapy to the DPT, the DPT to residencies and fellowships, and from that to whatever comes next," he says. "I hope that, with improved education and training, PTs will increasingly be recognized for our important role in interdisciplinary health care. It's an exciting time to be a DPT!"

PHOTO BY CHRISTINA GANDOLFO

PHOTO BY CHRISTINA GANDOLFO

THE WALKING MIRACLE

Alfred Lopez nearly died from necrotizing fasciitis (flesh-eating bacteria) — a condition that destroys skin, muscle and fat. But thanks to the tireless work of an expert Keck medical team, including the division's Wound Management Team, Lopez was able to fight through seemingly impossible circumstances to reclaim his leg and life.

BY STEPHANIE CORRAL

"His whole leg was without flesh. It looked like something out of an anatomy book."

—Aurora Jubile
Alfred Lopez's Sister

PHOTO BY CHRISTINA GANDOLFO

After being resuscitated in a USC Verdugo Hills Hospital operating room, Alfred Lopez* was transferred to Keck Medical Center of USC on May 12, on a ventilator, in septic shock and experiencing multi-organ failure.

Lopez, a 56-year-old Ralph's market produce worker, had necrotizing fasciitis, a rare bacterial infection that usually enters the body through an open wound and rapidly spreads through soft tissue, eating away at muscle and flesh at an alarming rate of an inch an hour.

In Lopez's case, there was no trace of an open wound. Without being able to locate the origin of the flesh-eating disease in his body, the Keck team raced against the clock to save his right leg — which had tripled in size — and his life.

"When they told me what it was, I knew we had a long battle," says his sister Aurora Jubile, who had encountered the disease during her 31 years of experience as a registered nurse.

A CT scan finally pinpointed the disease's source: A plum-sized abscess had ruptured in Lopez's rectum and had spread into the soft tissues of his right leg.

"I was scared, but I had a lot of faith," says Lopez, who has trouble remembering the early details of his ordeal because of the heavy sedation and pain he was in.

Lopez finally started turning a corner, thanks to the aggressive and unified approach taken by Keck's experienced surgeons, nurses and wound care physical therapists.

"Alfred survived with excellent functional results because of the state-of-the-art multi-disciplinary team effort" available at Keck, says Dr. Demetrios Demetriades, director of the trauma and surgical intensive care unit division at the hospital.

Demetriades performed seven of the 10 surgeries Lopez received during a three-and-a-half-month period.

To stay ahead of the bacteria, a team of six wound care physical therapists dressed his wounds every day, which sometimes took up to two hours to complete.

"The main challenge was the location and extent of his wounds, in particular his posterior hip and perineum," says Angela Kwan, lead in-patient wound care physical therapist at Keck.

Jubile had never seen anything like it. "His whole leg was without flesh. It looked like something out of an anatomy book."

The fact that Lopez healed and wakes up every morning to walk a mile uphill (with the help of a cane) is nothing short of a miracle.

Stephanie Woelfel, instructor of clinical physical therapy at Keck and a board certified wound specialist, credits Lopez's unlikely recovery to Demetriades' high skill and Keck's team approach to complex cases.

"The collaboration in Al's case is what made it so successful," Woelfel says. "Dr. Demetriades would sometimes bring us [Kwan and Woelfel] into the operation room so that we could see what he was doing during surgery so that we knew what we were going to have deal with."

Woelfel fell in love with wound care after graduating from Marquette University's physical therapy master's program.

"You can literally see the change happen in front of your eyes, week to week," Woelfel says. "It's awesome to see a wound heal like that."

Wound care physical therapy can be traced back to World War II when physical therapists played an essential role in the rehabilitation and wound management of injured soldiers in acute care hospitals.

Since then, the specialized practice has evolved beyond wound dressing. Wound care physical therapists can provide patients electrostimulation, low frequency ultrasound and the application of negative pressure to promote wound healing.

"Wound care physical therapists provide a unique perspective because we look at the functional implications of a wound," Woelfel says. This allows them to make recommendations to surgeons. "We think, 'How is this going to affect the patient's ability to move?'"

While Lopez was receiving antibiotics intravenously, the wound care team also inserted catheters into his dressings so that nurses could administer antimicrobial solution throughout the day, creating a two-pronged approach to treating the infection.

In addition to providing wound management to inpatients and outpatients at Keck, Woelfel is also one of the center coordinators for clinical education of physical therapy students at Keck and an instructor of clinical physical therapy at the USC Division of Biokinesiology and Physical Therapy.

The physical therapy faculty practice at Keck accepts more than 50 students a year for clinical training.

What makes USC's physical therapy program different, Woelfel said, is that the students see the methods they are taught in the classroom directly reflected in the clinic.

The division's integrated curriculum also affords students a well-rounded education by introducing them to various physical therapy specialties, such as wound care.

"Wound care physical therapists provide a unique perspective because we look at the functional implications of a wound. We think, 'How is this going to affect the patient's ability to move?'"

—Stephanie Woelfel
Instructor of Clinical Physical Therapy

"It solidifies things," Woelfel says. "Some students might ask, 'Why do I have to learn about wound care?' Regardless of the area of physical therapy you practice in, all of your patients will have skin."

Lopez, whose ordeal had turned him into a legend in Keck's hallways long before his Aug. 29 release, is especially grateful to Demetriades and the wound care physical therapists who still text him to see how he is doing.

"They are great people," says Lopez, who is currently receiving physical and occupational therapy at Casa Colina. "They were all good to me, especially Stephanie and Angela. They were there all the time."

**Story shared with Lopez's permission.*

NAPHA PHYKAL QUACH
In addition to her own personal gain, Phykal Quach wanted to take part in the WHEL study because of its research aspect. "I knew my participation was going to benefit others, so that was a big part of my attraction to it."

MOVING *Forward*

USC's Women's Health and Exercise Laboratory's 16-week study helps breast cancer survivors reclaim their bodies.

BY MICHELLE McCARTHY

WATCH IT: vimeo.com/194884284

Post-menopausal women who have had breast cancer and are obese have a 40-50% increased chance of mortality compared to their counterparts.

SOURCE: *JOURNAL OF CLINICAL ONCOLOGY*

PHOTO BY CHRISTINA GANDOLFO

When Napha Phykal Quach* was approached to join a research study examining the effects of exercise on breast cancer survivors at the Women's Health and Exercise Laboratory (WHEL) at the USC Division of Biokinesiology and Physical Therapy, she wasn't exactly thrilled at the prospect of working out.

Prior to her diagnosis in 2014, she was a self-described "bump on a log" and says the closest she got to cardio machines was seeing them in TV commercials. While quick to crack a joke, Phykal Quach refers to the offer as heaven sent. She'd undergone six months of chemotherapy, a lumpectomy and then radiation. "I knew I needed to do it if I wanted to stay alive," she says.

Breast cancer patients often gain weight during chemotherapy, and while there is no proven direct link between the treatment and weight gain, drug side effects, such as inactivity due to fatigue and a change in dietary habits, can cause increased body mass.

ONE-ON-ONE WITH A PERSONAL TRAINER

Funded by the National Cancer Institute, WHEL's study is the largest of its kind and was established in 2012 with the goal of using exercise to reduce metabolic syndrome (a group of medical conditions such as high blood pressure, obesity and high blood sugar that can lead to heart disease, diabetes or stroke) in women who have undergone treatment for breast cancer.

"It's a 16-week program for women who have finished treatment within the past six months, had Stage 1 through 3 breast cancer, have undergone chemotherapy and/or radiation and are overweight or obese," says WHEL director Christina M. Dieli-Conwright PhD '09, who is assisted in her research by doctoral students Jackie Kiwata and Kyuwan Lee.

"We are trying to offset the side effects they would potentially experience from chemotherapy and radiation," Dieli adds.

To be eligible, participants also had to be sedentary, which the study defines as partaking in less than 60 minutes of structured physical activity per week.

Before being diagnosed with breast cancer in 2015, Sylvia Kast took morning walks with friends but hadn't set foot in a gym for years. With three kids in college, she was too busy. So when asked to sign up for the program, she didn't hesitate. "I was excited because before I got diagnosed, I was trying to get into shape," she says.

Similarly, Carla Sanchez bowled three times a week but had never lifted weights, a pattern Dieli-Conwright noticed with a lot of the women in the study. "It's one-on-one with a personal trainer, which is absolutely fantastic because most of us women in particular have never done any weight training ever," Sanchez says.

FROM SEDENTARY TO STRONG

Aerobic and resistance training is combined to expose survivors to the benefits of weightlifting — not only for muscle strength but also for bone density, balance and more. Workout sessions are an hour long, three times a week, with two days spent using a combination of aerobic and resistance exercises and one dedicated to aerobic activity alone.

The women begin with a five-minute cardio warm-up on a stationary bike, rowing machine or treadmill. On resistance days, there are eight exercises, four for the lower body and four for the upper, which are done in superset fashion. The workout is capped off with 20 to 35 minutes on a cardio machine. Aerobic day includes the choice of treadmill walking/jogging, rowing or cycling at 65-80 percent heart rate max for 20 minutes (week 1) to 35 minutes (week 16).

1 in 3 U.S. women will get cancer in their lifetime

SOURCE: AMERICAN INSTITUTE FOR CANCER RESEARCH

**Story shared with permission of Kast, Phykal Quach and Sanchez.*

Continued on page 22 »

PHOTO BY CHRISTINA GANDOLFO

CARLA SANCHEZ
Thirty-five years ago, Carla was working as a registered nurse at Los Angeles County USC Medical Center with patients who had recently undergone mastectomies. At that time, the women were instructed not to lift more than five pounds after their surgery. "After my reconstruction, my plastic surgeon told me I could lift 15 pounds. It's really changed — but it's a good change."

MOVING *Forward*

Continued from page 17 »

"The program is progressive in that every three to four weeks things get harder," Dieli-Conwright explains. "They lift more weight, do more repetitions and do aerobic exercise for a longer period and with higher intensity."

Kast has completed 12 weeks of the trial and is already feeling its effects. "Physically, I feel stronger," she says. "I feel both arms getting stronger, my legs a little stronger." It's a sentiment echoed by Sanchez: "All of the new exercise has made me stronger, and that is important for maintaining my range of motion and protecting myself from injury."

88,415 breast cancer cases can be prevented with lifestyle changes

SOURCE: AMERICAN INSTITUTE FOR CANCER RESEARCH

Phykal Quach says the transition wasn't just physical, but mental. She was suffering from "chemo brain," a side effect of the treatment that causes disruption in cognitive function such as memory loss and inability to concentrate.

"Exercising helped me clear up my mind and focus for that hour," she says. "I didn't have to think about it, because I had a trainer — a physical therapy student — who was spotting and encouraging me. 'I need to do these 12 reps and then I'm going over there to that machine.' It's very linear."

Data on 40 of the 95 participants has been analyzed, and preliminary results from the study found HDLs (the "good cholesterol") increased, while blood pressure, glucose, cholesterol and waist circumference decreased.

"There are some who come in here and leave saying, 'You saved my life.' And 'I never thought I'd be able to exercise again,'" Dieli-Conwright says. "It has a very strong impact on their well-being. It's very helpful and motivating to know that we can impact their lives."

WHAT'S NEXT?

Funding for this program will finish next summer, however, WHEL is going to continue the study with donations from past participants. The goal is to expand this study by researching the effects of exercise to combat breast cancer recurrence.

It will take a longer and larger trial, one that Dieli-Conwright says they are now trying to get a grant for. "It's a more invasive study and involves taking fat tissue samples from the abdomen to see how exercise affects fat biology," she says. "We hope to be able to start something like that within the next year or so."

In addition to making strides in the cancer segment, she says studies such as these bring more visibility to the field of movement science, exercise physiology and physical therapy by constantly promoting exercise and movement.

For Phykal Quach, the program changed how she thought about exercise. "In the beginning, I asked Christina about people who get a high from exercise. I said, 'When is that going to happen to me?'"

It didn't take long. She is proud to announce that she purchased a rowing machine and kettle bells and is now working out at home. "My sister can't believe it," she says, with a laugh. More importantly, it's made her feel whole again.

"For a year, I didn't own my body. The cancer, the doctors, the chemo owned it. But through this program, I was able to take my body back."

Learn more about the Women's Health and Exercise Laboratory at **pt.usc.edu/labs/whel/**.

Research was supported by the National Cancer Institute of the National Institutes of Health (award number K07CA160718).

SYLVIA KAST
Following surgery, breast cancer survivors can face a limited range of motion in their affected arms. Sylvia was having issues with her left shoulder but found the WHEL physical therapists listened to her needs and customized her workouts accordingly. "I tell them what I can and cannot do, and they really support me."

PHOTO BY CHRISTINA GANDOLFO

PASSPORT TO CHINA

The division now offers students an exciting opportunity to complete their six-week summer affiliation in Beijing.

BY JAMIE WETHERBE MA '04

With the majestic Beijing National Stadium ("Birds Nest") in the background, Drew Blanchard DPT '18, Tyler Ho and Dr. Lilian Chen demonstrate proper exercises to prevent running injuries at a running symposium.

Cristi Magracia DPT '18 performs a soft-tissue mobilization on the quadricep muscles of a soccer player from Tsinghua University.

"The experience gave me an appreciation for what PT is at its core and the many ways you can interpret and practice it."

—Cristi Magracia DPT '18

Drew Blanchard DPT '17 provides treatment to a young man who suffered his third patellar dislocation.

As an undergrad, Cristi Magracia DPT '18 learned so much by studying internationally in Asia that she jumped at the chance for a similar experience while pursuing her physical therapy degree at USC.

"Studying in Japan gave me such a new perspective on the world," she says. "I was excited to go abroad again — this time to gain a new perspective on physical therapy."

In August, Magracia was among the first USC physical therapy students to complete the six-week summer affiliation between their first and second years of the DPT program in China instead of stateside.

"The department has volunteer trips to places like Mexico and Costa Rica, but this program was an official clinical rotation with a clinical instructor," Magracia says. "I want to be a travel physical therapist and work abroad, so this clinical was exactly what I needed to help decide my future."

UNIQUE CULTURAL EXPERIENCES

The China rotation, which launched this summer, has so far ushered three physical therapy students to Beijing — with a fourth signed on for spring 2017 — for a six-week rotation.

In addition to the six-week affiliation, USC DPT students are required to complete 3 two-week practica during their first two years. In their third year, DPT students complete two 16-week clerkships, one part-time and one full-time.

The goal of the clinical education program is that each student will meet and exceed the performance level expected of an entry-level physical therapist during the third-year of the DPT program.

While the clinical practice and supervision experiences in China — including evaluations, assessments, treatments and follow-ups — are parallel with physical therapy students who complete their six-week rotation in the states, "the cultural experience is, of course, unique," says Joe Godges, adjunct associate professor of clinical physical therapy and curriculum coordinator for the China rotation program.

Godges says students could soon have even more options in China and beyond.

CLINICAL EDUCATION

USC DPT students complete several practica, affiliations and clerkships throughout their program to learn to apply their academic knowledge practically. The goal is for a third-year USC DPT student to exceed the expected performance level of an entry-level physical therapist even before they graduate.

"The Division of Biokinesiology and Physical Therapy is currently discussing additional clinical education collaborations with health care organizations in Saudi Arabia, India and Kenya, as well as in China," he says.

While in China, Magracia split her clinical time between Huaxin Hospital and private practices near Beijing's National Aquatics Center and the city's financial district.

Although Magracia treated similar conditions to those she would see in U.S. patients — including athletic injuries as well as neck and back pain from deskwork — she learned her delivery needed to be different for Chinese patients.

"In America, it's more accepted that every body has unique characteristics, but, in China, patients were very sensitive about the state of their bodies," says Magracia, who often spoke to patients with the help of an interpreter. "It was very easy to alarm someone if I wasn't careful with how I worded my findings."

Presenting ample evidence about physical therapy to patients also helped.

"Patients often wondered if physical therapy was really effective compared to other forms of treatment," she explains. "They would ask for statistics about how successful it was at treating their condition, so being able to cite U.S. research and patient experiences helped with the buy-in."

PUTTING DOWN ROOTS

Like Magracia, Drew Blanchard DPT '17, who is currently in Beijing on his clinical rotation, saw USC's China rotation as a "rare and exceptional" opportunity to introduce physical therapy to one of the word's largest countries.

"Every week, we go to various hospitals around Beijing to build relationships with doctors and surgeons in order to gain more referral sources and spread the word of physical therapy to other health care professionals," he says. "We are trying to lay a foundation in China for future rehabilitation specialists and influence the rehabilitation culture, one person and patient at a time. I get to be a part of this process on the front line."

"We are trying to lay a foundation in China for future rehabilitation specialists and influence the rehabilitation culture, one person and patient at a time."

—Drew Blanchard DPT '17

With less access to physical therapy, Blanchard says he would often see hospital patients on doctor-prescribed bed rest for months, including a 19-year-old who had undergone hip dysplasia surgery. "[This man] was in bed for nine months prior to us seeing him," he recalls.

Magracia shares Blanchard's sentiments regarding the potential growth of physical therapy throughout China.

"It's not as firmly established [as in other countries], and there's a huge opportunity to set solid roots so physical therapy can grow and evolve as an evidence-based practice."

Working in a country with less access to physical therapy led to unique learning moments for Magracia.

"Many times I didn't have access to certain equipment or modalities, and I had to break down PT to its basics to treat patients who had no experience with this type of treatment," she says. "I was also educating general practitioners about when to refer patients to physical therapists."

Magracia's most rewarding experiences involved providing patients with an understanding of their pain or limitations and giving them a game plan.

"Unlike other options they'd tried, PT can be so specific at providing patients with something they can actively do to improve their condition," she says. "The experience gave me an appreciation for what PT is at its core and the many ways you can interpret and practice it."

USC PHYSICAL THERAPY:

There's an app for that!

Looking at *inMotion* on your desktop computer?

You're just a few clicks away from a media rich, interactive publication for the 21st century.

Follow these steps to download the *inMotion* app to your favorite tablet or smartphone:

1. Visit *amazon.com* (for a Kindle reader), *play.google.com* (for an Android phone or tablet) or *itunes.apple.com* (for an iPhone or iPad).
2. Search for the *inMotion* app by typing in the search terms "USC Physical Therapy Magazine."
3. Download the free app.
4. Begin enjoying the Fall 2016 issue right away.

amazonkindle · Google play · Download on the App Store

EVEN ☆ HEROES ☆ GET HURT

... And when they do, they rely on the expertise of these three USC physical therapy alumni who have landed highly coveted positions with big-name sports teams.

BY YASMINE PEZESHKPOUR MCM '16

When their patients are hurt, people tend to notice.

These USC physical therapy alumni provide treatment to individuals whose very careers depend on their bodies functioning at the highest level possible. And when their professional athlete patients take a fall, these PTs must race against the clock to get them back up on their feet and healthfully functioning — sometimes within a matter of days. While each is talented in his own right, these high-profile practitioners attribute their successful careers to the networks they were introduced to while at USC and the clinical training that made them confident enough to treat these athletic superstars.

READ MORE >>

JESSE PHILLIPS DPT ’12

WASHINGTON WIZARDS

Jesse Phillips was introduced to physical therapy at an early age. As a three-sport athlete throughout high school, Phillips admits he spent a fair share of time injured and in physical therapy clinics where he got to observe the profession firsthand.

“I originally wanted to be an orthopedic surgeon, and while I have a great deal of respect for them, I developed a deep appreciation for the relationships that physical therapists build with their patients,” he says. “When you see someone two or three times a week, you have the ability to get to know the person — not just the body part that you work with.”

When it came time to apply for physical therapy school, Phillips set his sights on USC because of its national reputation. When he first applied, he was accepted to the wait list.

“I called the front office every single day for around two months to see if I had moved up on the list at all,” he says, with a laugh. “I’m sure I got pretty annoying. Then one day, Dr. Jesus Dominguez called me and said, ‘This is it, Jesse. This is the call you’ve been waiting for.’”

After earning his doctor of physical therapy degree in 2012, Phillips completed a sports residency with the division. During his last year at USC, a clinical instructor from his internship asked him to work with a prominent Washington Wizards basketball player who would be in Los Angeles during the 2015 NBA off-season.

At the end of the following season, when there was an opening with the team, Phillips went for it. After nearly nine hours of interviews with the Washington Wizards, he was offered the position of director of player performance and rehabilitation.

A typical day begins really early. Phillips must be present before, during and after practices to ensure that the players receive the proper care. He also travels with the team for games.

“I’m with them all the time,” he says. “Surprisingly, they aren’t sick of me yet.”

While seeing the players’ nearly superhuman feats is amazing, Phillips says the most satisfying aspect of his job is to see their progress and determination after an injury.

“The most rewarding thing that I’ve experienced so far, is to take a player who has had two knee surgeries this past off-season, and to see him dunk three times in one pre-season game ... ” he says. “It’s great to know that the work that I’m doing with players is helping to get them back on the court and compete at a high level.”

JON HERNANDEZ DPT ’13

LOS ANGELES RAMS

Jon Hernandez is no rookie at treating elite athletes. Upon completion of his doctor of physical therapy degree and sports residency, Hernandez moved to the East Coast to work as a physical therapist and athletic trainer with the Buffalo Bills.

Earlier this year, Hernandez left behind the Buffalo Bills to take a job with the Los Angeles Rams, which brought the Trojan back to his old stomping grounds at the L.A. Coliseum.

“I had always dreamed of returning to Southern California to work and eventually settle down, but I never imagined that opportunity would come so soon,” he says.

Hernandez serves as physical therapist and athletic trainer for the Rams and, unlike his previous role, he now travels with the team to assist them on game day.

“The team really wants all hands on deck for game days and injury response,” Hernandez says.

When he’s not on the road, Hernandez typically arrives to work much earlier than the players so he can treat injured reserve players. He also manages to fit in as many treatments as possible between meetings and practice for other players.

“By game day if the players are not feeling 100 percent, then they’re probably not going to play,” he says. “We try to get in three treatments a day and encourage players to do self-treatment at home so that they are doing as much as they can to prep.”

While some of these professional athletes are considered heroes, Hernandez is not as starstruck.

“I treat them the way I would treat anyone,” he says. “A lot of what I do is based on what I learned at USC, figuring out what the athletes’ goals are. Whether to catch a pass, run around or block a defender, I address their problems and give them a plan to get back on the field.”

In addition to day-to-day management, prevention and response, Hernandez also treats players recovering from more serious injuries and operations.

“The little successes you see with long-term rehab are pretty cool. That can help a player’s mentality tremendously,” he says. “Getting past those obstacles and working with them to overcome fear and doubt is also very rewarding.”

With limited time between game days, Hernandez has to be creative and incredibly efficient when providing treatment to the athletes.

“At the end of the day, it’s about the players. The players are why we have jobs. Their hard work is what motivates me. I get pride going to bed at night knowing I gave them my best possible effort.”

Chris Gerona (second from right) with the Kron Gracie MMA Team

CHRIS GERONA ’03, DPT ’08

LOS ANGELES SPARKS & BRAZILIAN JIU JITSU / MIXED MARTIAL ARTS

While mixed martial arts and women’s basketball have little in common in terms of strategy, they both require their athletes to be in top physical condition to perform at high levels.

That’s exactly what keeps Chris Gerona on his toes as a physical therapist. As physical therapist to the L.A. Sparks basketball team and to multiple professional mixed martial artists (MMA), Gerona’s expertise allows him not only to train these athletes but also to improve their technique to both prevent and recover from injuries.

“I have to make sure that they have the capabilities to perform at their highest level at all times, which also goes into their training,” he says.

Gerona first started training Brazilian Jiu Jitsu and MMA athletes in 1994. Since then, he has traveled around the world helping at training camps as well as waiting in the cage’s corner for the MMA fighters.

“The best experience was traveling to Japan, working with Kron Gracie for his MMA fight,” he says. “We all stayed in a house in Okinawa, secluded on an island, to focus on training, which included meditation and rehab sessions to prepare his body for the more intense workouts.”

His work with the L.A. Sparks is only slightly different. Gerona has been physical therapist for the Sparks since 2010 and is responsible for treating players before, during and after games.

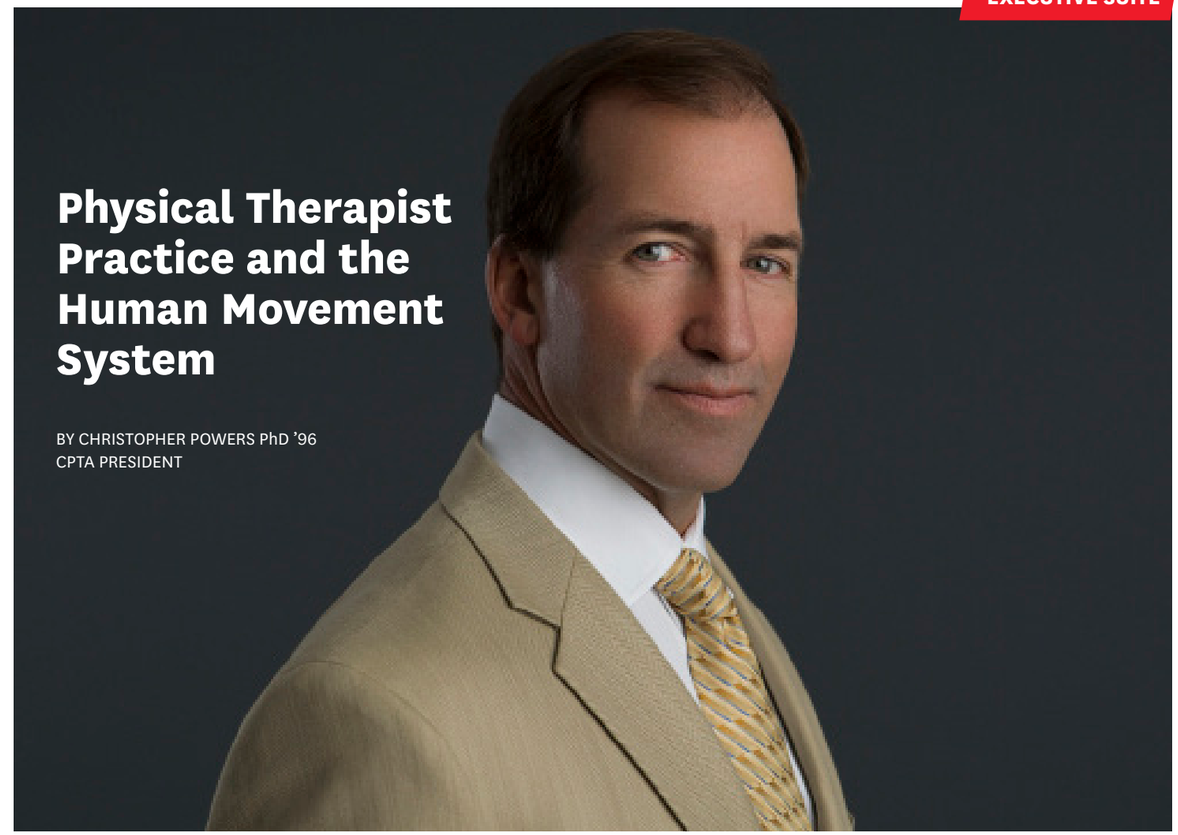
“I am behind the bench during the games and ready for anything,” Gerona says. If necessary, he stays after the final buzzer to provide treatment.

Players also schedule time with Gerona for more extensive treatments and preventive work at his clinic.

“It is rewarding to help a person recover and improve their lifestyle. To help them return to function is a blessing to me,” Gerona says. “When I help them reach their goals, whether it is to put on their shirt or to run and jump again, it is the biggest reward and gift that I can envision for myself.”

Gerona credits his successful career to the time he spent as a Trojan.

“USC provided a very strong foundation that emphasized strong but creative critical thinking and reasoning,” Gerona says. “This base is essential to progress and build your knowledge. These days I feel that I need to constantly learn or improve myself in order to provide the best level of care for my patients and athletes.”



Physical Therapist Practice and the Human Movement System

BY CHRISTOPHER POWERS PhD ’96
CPTA PRESIDENT

PHOTO BY NATE JENSEN

Through the use of our knowledge and expertise in movement, the shared vision of APTA and CPTA calls upon the profession to “transform society by optimizing movement to improve the human experience.”

We do this to promote health and wellness, mitigate the progression of impairments and prevent additional disability.[1] Our vision challenges the profession to fulfill our commitment to society and focuses our identity on defining, promoting and integrating the “Movement System” as the core of who we are and what we do.[1] In 2015, the APTA Board of Directors Task Force defined the Movement System as “the anatomic structures and physiologic functions that interact to move the body or its component parts.”[1] In short, the Movement System can be viewed as the integrated function of the bodily systems that govern movement.

Over the past year, I have responded to several challenges to the Movement System concept. Namely, why is this needed? Why now?

In my opinion, there are two issues. First, physical therapists and physical therapist assistants are too often identified by what we do, and not by what we know as professionals.

Although public recognition for PT practice methods and outcomes is essential, understanding that PTs and PTAs achieve these outcomes through clinical reasoning and practice that emanates from a distinct body of knowledge is crucial to our professional identity.

Second, the profession is not conveying a consistent and clear message to consumers, payers, legislators, etc., about what we do and what makes us distinctive in the world of health care.

Hence there is public confusion about what we do and how we are different from the chiropractors, athletic trainers, etc. In short, I believe our identity (both internally and externally) is not clearly defined and articulated.

If you ask a group of physical therapists the question “What is a physical therapist?” you likely will get varied responses. Would the same thing happen if you ask the same question to a group of orthopaedic surgeons or neurologists?

The Movement System concept provides us the framework by which we can use our identity to the benefit of the patient. For example, the physical therapist and physical therapist assistant evaluates and treats the Movement System to reduce pain, increase function, etc.

The Movement System concept allows us the ability to better organize our distinctive approach to patient care (movement evaluation, clinical decision making, treatment approaches to improve movement, etc.) as well as our entry-level education process.

Currently, patient care is highly variable. If you went to 10 physical therapy clinics for the same condition, you would likely have 10 vastly different experiences!

I see the concept of the Movement System as a way to better organize our practice, education and research to reduce variance in practice. While the concept of the Movement System may not be new, it is certainly a way to frame our knowledge base and reinforce our brand to the public.

CPTA is committed to promoting our identity as the experts in the evaluation and treatment of movement dysfunction. CPTA’s branding campaign “Physical Therapists Improve the Way You Move” was implemented specifically to educate the consumer about the role of the physical therapist in optimizing movement.

1. APTA White Paper. Physical Therapist Practice and the Human Movement System, August 2015. *www.apta.org/MovementSystem/*

CLASS NOTES

1976

THOMAS PAYNE MPT '76 and his wife Yvonne relocated to the Washington D.C.-area to be near their daughter Margo Payne-Robinson DDS, who attended Howard University. Payne has a small office in Gainesville, Va., (mainly clinical EMG/NCV and women's/men's health work, he says). He misses Southern California and says he still keeps up with USC football, even from the East Coast. Payne can be reached at *tpayneemg@yahoo.com*.

1987

KAREN FREDERICK MPT '87 became a Fellow in the American College of Healthcare Executives in March 2016, after a three-year journey that included successful completion of a national board of governors exam, civic service and a demonstration of her commitment to proficient and ethical health care leadership. She also completed her transitional DPT through the College of St. Scholastica in Duluth, Minn., in May 2016.

1988

ALLEN LING MPT '88 and his physical therapy colleague Lee Yek DPT were invited to Ireland to help stuntmen and actors recover from any injuries (caused by overuse or unexpected impact) on the set of AMC's *Into the Badlands*. Allen volunteered to help when the TV production was in New Orleans. Daniel Wu, the show's lead actor and executive producer, trained at Ling's private practice, Physical Therapy Innovations, Inc., to prepare for his role. "I am looking to help every year of the production I can, whether it be helping Daniel train here or on the set!," Ling says.

1989

SHERYL EINFALT MPT '89 is now in her 13th year as the PTA program director at Ohlone College. She recently completed her second CAPTE accreditation exercise and self-study report for the program. The last one was in 2006, and all of the graduates from the program have scored a 100 percent pass rate on the national physical therapy assistant examination every year since 2007.

2001

KIM RONDINA DPT '01 opened Transform Manual Physical Therapy with two locations in Scottsdale and Phoenix. The cash-based practice specializes in functional manual therapy, visceral and neural manipulation, and functional dry needling and active release techniques. Rondina has also earned teaching assistant credentials for *Visceral Manipulation: Abdomen 1* from the Barral Institute.

2002

JASON TERRY DPT '02 received NCS re-certification in 2016. He was Utah's Physical Therapist of the Year in 2009 and is the proud father of five kids.

2004

CASSANDRA SANDERS-HOLLY DPT '04 reports that development is underway for a clinic facility onsite at the newly acquired 3.5-acre Leaps & Bounds ranch. Leaps & Bounds currently serves more than 125 patients per week, with therapists incorporating evidence-based hippotherapy strategies. The new clinic will house the more than 400 weekly sessions of occupational therapy, physical therapy and speech therapy, currently provided at a leased retail clinic space offsite. This new facility clinic — designed by Sanders-Holly (with input from all 30 of her staff members) — will complete the Leaps & Bounds campus and allow for substantial growth and service to Inland Empire children.

2005

CARMEN ROMANO DPT '05 continues to work full-time at Kaiser Permanente in Santa Clara, Calif., and is a member of the American Physical Therapy Association. She welcomed a new addition to the family, her third child Duncan, who was born in May 2016

2007

MARY K. BARRY DPT '07 married Matt Powell on Oct. 3, 2015 and celebrated her eight-year anniversary as clinic director at Delta Physical Therapy, a Movement for Life Clinic. Barry is an adjunct professor at the University of the Pacific.

KARINA (KUNDER) ZAPATA DPT '07 is the principal investigator of a two-year, $79,780 grant awarded by the Scoliosis Research Society, entitled "Scoliosis-specific exercises for at-risk mild adolescent idiopathic scoliosis curves: a multi-site preliminary randomized trial," taking place at Texas Scottish Rite Hospital for Children.

2008

RICHARD SOUZA PHD '08 Richard Souza, associate professor in UC-San Francisco's department of physical therapy and rehabilitation science was recently awarded an NIH R01 grant for a study titled "Evaluating Disease Progression in Hip Osteoarthritis." It is a multiple-primary investigator project being done in collaboration with Sharmila Majumdar from the Department of Radiology and Biomedical Imaging at UCSF. The total amount of funding for this grant is $3.3 million, and the five-year award period began in July 2016.

2009

JARED VAGY DPT '09 has been promoted to course coordinator for PT521: Basics of Patient Management in the doctor of physical therapy curriculum at the USC Division of Biokinesiology and Physical Therapy.

2011

CHAD BEAUCHAMP DPT '11 is the owner and head physical therapist of Repair Sports Institute. This year, the clinic opened two satellite locations in Anaheim and Newport Beach. Beauchamp received his specialist certification in sports in 2013 and served as an international provider for the USA Beach Volleyball team in 2012. He made it to the last round of selection for beach volleyball medical providers at this year's Olympic games in Rio de Janeiro, Brazil. He also had research published in the *International Journal of Sports Physical Therapy* in 2013 and was recently featured in the *California Business Journal*.

SAMANTHA (DUTROW) NORWOOD DPT '11 recently participated in a mission trip with Operation Rainbow to La Ceiba, Honduras, where her team provided more than 40 free surgeries to children and adults. Norwood provided more than 100 non-surgical interventions, including crutch training, exercise programs, orthoses fitting and fabricating splints out of tongue depressors and theraband.

2014

EVYONNE GREENE DPT '14 recently completed the MedStar National Rehabilitation Network / George Washington University neurologic physical therapy residency program. Her research abstract was accepted for a poster presentation at the John's Hopkins Research Day taking place in November 2016.

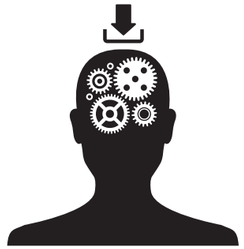
2016

JOSEPH DERIAN DPT '16 recently received a research grant from the California Orthopedic Manual Physical Therapy Special Interest Group of the California Physical Therapy Association.

SHARE YOUR NEWS WITH YOUR CLASSMATES

Got some exciting news to share with your fellow alumni? Tell us about your awards and grants, publications, professional developments, births and marriages for possible inclusion in an upcoming issue of *inMotion*.

Visit **pt.usc.edu/Stay_In_Touch**



CONTINUING PROFESSIONAL EDUCATION

LIVE COURSES:

ORTHOPEDIC BOOT CAMP: MANAGEMENT OF THE SHOULDER
January 7-8, 2017
Instructor: Sean Johnson, PT, DPT, OCS
1.5 CEUs

ORTHOPEDIC BOOT CAMP: MANAGEMENT OF THE THORACIC SPINE AND RIBS
January 28-29, 2017
Instructor: Sean Johnson, PT, DPT, OCS
1.5 CEUs

APTA CREDENTIALED CLINICAL INSTRUCTOR PROGRAM
January 28-29, 2017
Instructors: Michael Simpson, PT, DPT, CCS and Valerie R. Teglia, PT, DPT, NCS
1.4 CEUs

SPINE REHABILITATION SERIES-MODULE I: MOVEMENT AND MANIPULATIVE THERAPY
February 23-24, 2017: Get with the Guidelines-Neck and Back Pain (1.5 CEUs)
February 25-26, 2017: Soft Tissue Mobilization-The Science and the Art (1.5 CEUs)
February 27-28, 2017: Fundamentals of Spinal Manipulative Therapy (1.5 CEUs)
Instructor: Joe Godges, PT, DPT, OCS

ORTHOPEDIC BOOT CAMP: MANAGEMENT OF THE CERVICAL SPINE
March 4-5, 2017
Instructor: Daniel Kirages, PT, DPT, OCS, FAAOMPT
1.5 CEUs

SYKES SYMPOSIUM ON PEDIATRIC PHYSICAL THERAPY, HEALTH AND DEVELOPMENT
March 18-19, 2017
.8 CEUs

ORTHOPEDIC BOOT CAMP: MANAGEMENT OF THE PELVIC GIRDLE
April 8-9, 2017
Instructor: Daniel Kirages, PT, DPT, OCS, FAAOMPT
1.5 CEUs

ORTHOPEDIC BOOT CAMP: MANAGEMENT OF THE LUMBAR SPINE
May 6-7, 2017
Instructor: Daniel Kirages, PT, DPT, OCS, FAAOMPT
1.5 CEUs

ORTHOPEDIC BOOT CAMP: MANAGEMENT OF THE HIP AND KNEE
July 8-9, 2017
Instructor: Daniel Kirages, PT, DPT, OCS, FAAOMPT
1.5 CEUs

SPINE REHABILITATION SERIES - MODULE II: PAIN MANAGEMENT
May 20-21, 2017: Managing Spinal Pain - The Science and the Skill (1.5 CEUs)
May 22-23, 2017: Education and Counseling for Patients with Neck and Back Pain (1.5 CEUs)
May 24-25, 2017:Advanced Spinal Manipulative Therapy (1.5 CEUs)
Instructor: Joe Godges, PT, DPT, OCS

COMPREHENSIVE EVALUATION, TREATMENT, AND MANAGEMENT OF THE NOVICE TO ELITE ATHLETE
Lower Quarter Sports: July 20-23, 2017
Upper Quarter Sports: September 7-10, 2017
Instructors: Team of USC Faculty
3.0 CEUs per Module

ORTHOPEDIC PHYSICAL THERAPY SEMINAR SERIES
Lower Quarter Rehabilitation: July 30-August 6, 2017
Upper Quarter Rehabilitation: October 22-29, 2017
Instructor: Joe Godges, PT, DPT, OCS
5.6 CEUs per 8-day module

ORTHOPEDIC BOOT CAMP: MANAGEMENT OF THE FOOT AND ANKLE
August 26-27, 2017
Instructor: Daniel Kirages, PT, DPT, OCS, FAAOMPT
1.5 CEUs

ORTHOPEDIC BOOT CAMP: MANAGEMENT OF THE ELBOW, HAND, AND WRIST
November 11-12, 2017
Instructor: Sean Johnson, PT, DPT, OCS
1.5 CEUs

ONLINE COURSES:

ESSENTIALS FOR APPRAISING EVIDENCE
Instructors: Linda Fetters, PT, PhD, FAPTA and Julie Tilson, PT, DPT, NCS
2.0 CEUs for 4-part series

INTRODUCTION TO EXERCISE AND CANCER SURVIVORSHIP
Instructor: Christina Dieli-Conwright, PhD, CSCS
0.2 CEUs

INTRODUCTION TO MALE PELVIC HEALTH: URINARY INCONTINENCE
Instructor: Daniel Kirages, PT, DPT, OCS, FAAOMPT
0.2 CEU

THE VALUE OF SOCIAL MEDIA TO BRAND YOURSELF AS A PHYSICAL THERAPIST
Instructor: Jennifer Bandich, MBA
0.1 CEU

WOUND HEALING: TRANSLATING THEORY TO PRACTICE
Instructors: Rose Hamm, PT, DPT, CWS, FACCWS and Stephanie Woelfel-Dyess, PT, MPT, CWS, FACCWS
.6 CEUs

MY INSPIRATION BY CHRISTINA DIGGS

"I feel as though I am stepping into my purpose as a facilitator of healing, a facilitator of empowerment, a facilitator of learning and a facilitator of change."

PHOTO BY CHRISTINA GANDOLFO

It would be really hard to forget a spunky young woman named Jana* with a pixie cut and tattoos, cruising around in a bright-yellow power wheelchair.

This woman has been a source of great inspiration for me, helping me realize that I have found my purpose — not only as a physical therapist, but also as a human being.

Our relationship began one summer when I had the pleasure of working with her while I was a student completing a clinical rotation. We have stayed in touch ever since, which has led to more than a year of weekly workouts together.

Jana started using the power wheelchair as a source of mobility and independence 18 years ago after fracturing her neck while performing a stunt as a gymnast at Sea World. The accident resulted in a C5-C7 sensory incomplete spinal cord injury.

I remember our first consultation; we toured a state-of-the-art, two-story gym, walls lined with mirrors, spaces filled with inaccessible equipment. Together we approached different machines, problem-solving ways to make the equipment functional for her needs, determined to optimize our resources.

Together, we figured out many creative ways to complete each exercise.

From free weights to adaptive clips to therabands and manual resistance, we were burning calories and increasing heart rates. The experience challenged each of us individually — one intellectually, the other physically.

As our workouts continued, the effects on her function manifested in the neatest ways — like her becoming able to hold those big red fingers at the L.A. Clipper's game. Or she and her husband soaking up the sun and catching breezes while handcycling along the beach. The short-story videotext messages she sent me celebrating these adventures became movement analysis clips for me. And her fearless acts of human courage became my source of inspiration.

About eight months into our workouts, Jana began talking about a trip to Europe she and her husband were planning. Between cable rows and rest breaks, we discussed accessibility, practicality and the potential obstacles that could arise with a power wheelchair. Yet, traveling through Europe in a power chair was not at all what Jana had in mind.

Unbeknownst to me, she had been seriously considering and planning for the possibility of pushing her way through Europe. I vividly remember sitting in class one afternoon when I received two texts messages from Jana. The first was a video recording, with Jana pushing a manual wheelchair while singing the *Rocky* movie theme song. After 18 years in a power chair, Jana was proving there no limits to the power of healing. My own affirmation was building.

The second text was a video of her casually scrolling past the camera, dog in lap, with her background music playing blasting, "All I do is win, win, win no matter what." And it was fitting: In that moment, Jana had won.

I was in tears. I watched the video on repeat, shedding tears of joy, empowerment and, more significantly, purpose. I showed the video to any one with 15 seconds to spare, like a proud mom showing off pictures of her child.

As a recent graduate of USC's doctor of physical therapy program, I feel as though I am stepping into my purpose as a facilitator of healing, facilitator of empowerment, facilitator of learning and a facilitator of change. My decision to become a physical therapy has been affirmed.

**Story shared with Jana's permission.*

Watch Jana and her furry friend Chewie give their new chair a spin at tinyurl.com/jana-chewie

USC Division of Biokinesiology and Physical Therapy

University of Southern California
1540 Alcazar Street, CHP 155
Los Angeles, CA 90089-9006
pt.usc.edu