TAKING FLIGHT

USC LAUNCHES NEW MASTER'S IN BIOKINESIOLOGY PROGRAM WITH SPORTS SCIENCE EMPHASIS
Earlier this year, Drs. Philip Tehan (pictured here) and Peter Gibbons led two sold-out physical therapy continuing education courses at USC. Here, Tehan clarifies for CE student, Tiffany Yu, the application of a manual technique to the cervical spine on her classmate, Joyce Byun DPT ’13. Tehan and Gibbons are Australian osteopaths, who teach around the world about high-velocity, low-amplitude thrust techniques used in treating spinal dysfunction. They are co-authors of *Manipulation of the Spine, Thorax and Pelvis*. This was their 16th year presenting at USC.

PHOTO BY GLENN MARZANO
After reading this edition of InMotion, I told the editorial staff that this might be the best issue we have ever published. I was impressed, and sometimes emotionally affected, by the stories told by and about our students, faculty, patients.

I was struck most of all by the sheer energy of the activities written about in this issue, which represent only a small fraction of all the great things being done on a daily basis by our faculty, students, staff and patients.

We are fortunate to have a very talented group of professionals — editors, designers, writers, photographers and artists — who work very hard to bring their stories to life. You can find their names on the masthead.

I reflect on the positive energy in our Division depicted so skillfully in this issue because we are living through a period in which so much that is written about USC in the outside media has been negative, and, quite frankly, deservedly so. A few members of our community have done bad things and abused the trust placed in them.

Our leaders have not always taken the ethical high road. The entire USC community is engaged in serious soul-searching. We must redefine our ethical and moral values as an institution and dedicate ourselves to living up to those values every day.

Most of all, we understand now that our most important job is to protect all members of our community from harm.

The good news is that we have new leadership at the highest levels of the university that understands that it will take time to fix the problems at USC and to strengthen our culture and ethos.

At the same time, I want everyone who is not here at USC on a daily basis to know that we are not paralyzed by all the turmoil. On the contrary, we continue to move forward, sometimes at a dizzying pace.

Our energy, our motivation, our desire to transform ourselves and the world manifests itself in every corner of the Division. We are still doing great things, and it is our Trojan spirit that moves us. That’s why I continue to have trust that we — USC — will come through this period of crisis as a stronger, better university.

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

MOVING FORWARD
I received and the incredible support outcome, as well as the amazing care which was a big part of the favorable help to catch my cancer early, I think my education and awareness successful outcome? To what do you credit your other than coming out OK. that there would be any outcome pushed through it. I wouldn’t believe I basically kept my head down and the fight? attitude/emotion throughout How would you describe your to appreciate the journey. really have over life, so I’m learning never take anything for granted. I try to live more in the present and cancer changed your life? In what ways has the fight against USC Fit Families provides the resi - and won in this issue’s Featured Class of how she faced down brain cancer Sally Donaubauer shares the story of I’m making the world a safer place for my community. They had the fear and discomfort, resist the urge to be defensive, ask questions and practice reflective listening. Why is it important to share this knowledge with your peers? If I can help more practitioners and treatment to this population. What advice would you give to physical therapists in terms of What was it about USC Fit Families that first drew you to the program? I was involved in the initial development of the program in 2006. As a relatively new clinic at the time, I had a vision for creating a program to help reduce rates of diabetes, stroke, cardiovascular disease and other preventable chronic diseases within community with limited access to preventive services. It turns out the division shared this vision. What do you find most rewarding about participating? The most rewarding part is that I have the opportunity to provide a service that many in this community would otherwise not have access to. Why is it important to have programs like this for the resi- dents of East L.A.? East L.A. is a community with very high rates of diabetes and chronic diseases and low access to resources needed to foster a healthy lifestyle. USC Fit Families provides the resi- dents access to physical therapists and other resources to educate and empower them to live healthier lives. I was fortunate to have parents who supported me. This doesn’t mean, however, that the process was easy for them or for me. They had the fear and discom- fort that many of us do, but now, more than a decade later, they are incredibly proud and celebratory about all of who I am.

In “My inspiration (p. 38),” Oscar Gallardo discusses his 13 years working with USC Fit Families and how it embodies the reasons he wanted to become a physical ther- apist in the first place. What was it about USC Fit Families that first drew you to the program? I was involved in the initial development of the program in 2006. As a relatively new clinic at the time, I had a vision for creating a program to help reduce rates of diabetes, stroke, cardiovascular disease and other preventable chronic diseases within community with limited access to preventive services. It turns out the division shared this vision. What do you find most rewarding about participating? The most rewarding part is that I have the opportunity to provide a service that many in this community would otherwise not have access to. Why is it important to have programs like this for the resi- dents of East L.A.? East L.A. is a community with very high rates of diabetes and chronic diseases and low access to resources needed to foster a healthy lifestyle. USC Fit Families provides the resi- dents access to physical therapists and other resources to educate and empower them to live healthier lives.

BRAIN CANCER SURVIVOR
SALLY DONAUBAUER DPT ’08

Sally Donaubauer shares the story of how she faced down brain cancer and won this issue’s Featured Class Note (p. 27).

In what ways has the fight against brain cancer changed your life? In what ways has the fight against brain cancer changed your life? What advice would you give to physical therapists in terms of What advice would you give to physical therapists in terms of treating the LGBTQ+ community? In my experience, PTs want to be inclusive and sensitive to the LGBTQ+ community but fear “saying the wrong thing” or “offending someone.” I would encourage PTs to step into discomfort, resist the urge to be defensive, ask questions and practice reflective listening.

What advice would you give to physical therapists in terms of treating the LGBTQ+ community? In my experience, PTs want to be inclusive and sensitive to the LGBTQ+ community but fear “saying the wrong thing” or “offending someone.” I would encourage PTs to step into discomfort, resist the urge to be defensive, ask questions and practice reflective listening.

THE TRAILBLAZER 32
Melodie Daniels DPT ’21 realizes how few physical therapists actually look like her, with nearly 80 percent of all practicing physical therapists being Caucasian. But the hybrid DPT class president hopes to change that, inspiring other people of color to follow in her footsteps.

BOY, INTERRUPTED 14
BY STEPHANIE CORRALL
A chronic inner ear disorder kept 13-year-old Hudson Stimmerl in bed with vertigo for days at a time. After a surgical intervention, Stimmerl found himself at USC Physical Therapy in the care of Nora Darakjian DPT ’14, getting back to the boyhood that had been disrupted.

DISCOVER THE RAINBOW 28
BY K. MICHAEL ROWLEY PHD ’18
Clinical Assistant Professor of Physical Therapy K. Michael Rowley PhD ’18 unpacks the LGBTQQIA+- acronym for us with a discussion of the intersection of identity and biology.

PROTECTING THE PROTECTORS 34
BY MICHELLE MCCARTHY
No one would doubt that a police officer has a dangerous job, but that danger can come in all forms, including physical injury resulting from daily tasks. Meet Sarah Greytak DPT ’07, a USC alumna tasked with keeping Denver’s finest in tip-top shape.

FEATURE WRITER
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USC, XULA join forces to promote diversity in physical therapy profession

BY JOHN HOBBS MA ‘14

With nearly 80 percent of practicing physical therapists being Caucasian, the profession seems to have a diversity issue.

“It’s a problem that the USC Division of Biokinesiology and Physical Therapy and Xavier University of Louisiana (XULA) aim to tackle,” said Xavier Provost and Senior Vice President of faculty members.

Thanks to a new partnership between one of the nation’s top historically black colleges and one of the nation’s top physical therapy programs. “We ultimately want our profession to represent our patient population in every facet,” said instructor of Clinical Physical Therapy Terry Richardson II DPT ’14, who helped forge the unique partnership. “We specifically wanted to partner with XULA because they have been No. 1 in the U.S. for placing African-American students in health professional schools for well over 20 years.”

The partnership is meant to create a pipeline for XULA students to complete their prerequisites courses, gain valuable hands-on experience and develop mentoring relationships with Trojan faculty members.

“My hope is that, thanks to this partnership, more Xavier students will include physical therapy as a profession,” said Xavier Provost and Senior Vice President of Academic Affairs Anne E. McCall. “In the process, they will further diversify this important profession and help us fulfill our mission of contributing to a more just and humane society.”

HOW IT WORKS

XULA students can apply to the Early Assurance Program during the spring of their sophomore year. To be eligible, they must be committed to a physical therapy career and have maintained at least a 3.2 overall and science GPA.

The USC admissions committee will review all applications and invite the most qualified candidates to interview on campus the summer before their junior year. During the selection process, the USC admissions committee will consider academic performance, background, diverse experiences and perspectives, leadership potential, maturity, strong letters of support and a passion for service.

Once accepted, XULA students will begin receiving mentorship and individualized attention from USC faculty members to help them maintain academic success and become leaders in their field. They will also be offered summer opportunities to gain research and clinical experience.

Initially, USC and XULA hope to enroll as many as five to seven students every year.

“This partnership will create room for learning opportunities that can’t be found in a textbook,” said Richardson, who is also an XULA graduate, “which is why partnerships like these are so important in higher education.”

After graduating from XULA, Early Assurance Program students will be admitted to USC’s doctor of physical therapy program as long as they have maintained a 3.2 GPA, finished all the program’s prerequisite courses and completed a minimum of 150 hours of clinical experience in a physical therapy setting.

BLAZING THE TRAIL

Last summer, XULA undergraduate Kaseirz Coleman paved the way for the partnership, spending eight weeks at USC. Since then, he has been accepted into USC’s DPT program. This summer, USC welcomes Adili Rikondja, another XULA student to help further flesh out the program.

“I hope to serve as a role model for other Xavier students interested in the field,” she said. “It means the world to me to know that I have paved the way for other deserving students.”

Rikondja first became interested in physical therapy after suffering an ankle injury during volleyball practice in high school. Thanks to treatment she received at Xavier, she returned to the court a year later.

After high school, Rikondja found herself back at Xavier Permanente, this time working in the Kaiser Permanente Summer Youth Employment Program.

“It was meaningful to shadow and learn from the same physical therapists who rehabilitated me back to good health,” she said.

It was during this internship that Rikondja got advice from someone else who blazed a trail for African Americans: Renee Rommero DPT ’96, the first African American to graduate from USC’s post-professional doctor of physical therapy program.

“No matter how you look at it, you have a high force at the same ball velocity, which is why some pitchers need Tommy John surgery,” she explained. "When I finish school, I hope that my presence in the world will open doors for other deserving students.”

Rommero said thatRikondja’s story is “important” because it shows what can be accomplished with dedication and hard work.

"When I was in college, I was told that I could not do what I wanted to do," she said. "But now I see that I can make a difference in the lives of future physical therapists through my own success.”

Consultant in the USC DPT program, Rommero said that she was impressed with Rikondja’s passion for physical therapy and her desire to help others.

"She is a great addition to our program and we are excited to see where she goes in her career," she said.

BY MICHELLE MCCARTHY

Baseball fans are likely familiar with the phrase, “Tommy John surgery.” While pitching for the Los Angeles Dodgers in the 1970s, John underwent the first surgery of its kind to repair elbow damage. The technical name for the procedure is ulnar collateral ligament (UCL) reconstruction surgery.

UCL injury has been occurring more frequently in college baseball athletes, especially pitchers. In the past decade, and Professor Lori Michener is hoping to one day prevent it altogether. She recently received a PAC-12 Student-Athlete Health and Well-Being Grant to study UCL injury risk.

“The UCL is the ligament on the inside of your elbow that helps to stabilize the inside of your elbow joint,” explained Michener, director of the Clinical Biomechanics Orthopedic and Sports Outcome Research laboratory.

"Elbow torque (rotational force) occurs during pitching. The higher the torque goes, the more pressure it will put on that elbow ligament. If there’s too much pressure on the UCL, it can tear.”

The injuries are happening more often, most likely because pitchers are constantly striving to throw faster. But why do they occur in some pitchers and not others? That’s one of the issues Michener and her team will investigate in their study.

“We think it’s because of the factors being used to create ball velocity, which are strength and control of the legs through the trunk, through the shoulder and the hand,” she said. “We’re trying to understand how physical factors — a pitcher’s strength, range of motion and ability to control his motion — can mediate that force on the elbow.”

Participating in the study are 150 pitchers from three universities, including USC, the University of Oregon and the University of California, Los Angeles.

Michener and her team will be running these pitchers through a battery of tests, including measuring the amount of torque at their elbow when they throw a baseball, the strength and control of their core and legs, shoulder range of motion and how well they can sense the position of their joints.

“The hypothesis is that players who have a lower elbow force while they’re pitching and a set ball velocity compared to the pitchers who have a higher force at the same ball velocity will have better physical factors, (i.e. better strength, better ability to produce and use that strength and better range of motion and position sense),” Michener said. “We’re able to mediate and control the force that goes to the elbow during throwing."

"We use this in younger kids when they’re throwing,” she added. “They try to use their shoulder and elbow to get the ball where they want it to go versus trying to use their entire body so it’s fluid, low-force motion by the time it gets to the elbow, and there’s less force impacted to the elbow.”

Michener hopes to identify the physical factors that have the best ability to keep elbow torque lower while retaining the same velocity. That will give college medical professionals the tools to develop exercises to address any deficits.

“For example, if the deficit is a reduction in strength and control of your trunk,” Michener said. “We would give them exercises that have been shown to improve those areas. Our long-term goal is to prevent these UCL injuries.”
Kulig joined the division in 1997 as an associate professor of clinical physical therapy. She is one of the division’s nine Catherine Worthingham Fellows and was recently honored with an Award for Clinical Excellence in Neurology by the Academy of Neurologic Physical Therapy (ANPT). The award is meant to honor ANPT members who have demonstrated extraordinary dedication in providing excellent clinical care to the neurological patient population. The ANPT is one of the fastest growing sections of the American Physical Therapy Association. The section’s mission is to empower its members to optimize movement system performance for those impacted by neurologic conditions. Kulig’s many contributions include developing the Neurological Physical Therapy Network of outpatient neurological physical therapists and the Neurocollaborative, which brings together neurologic physical therapists to further promote the specialty, as well as her mentorship, teaching entry-level doctor of physical therapy students at USC.

**Hersberg Honored with Award for Clinical Excellence in Neurology**

Julia Hersberg, adjunct instructor of clinical physical therapy, was recently honored with an Award for Clinical Excellence in Neurology by the Academy of Neurologic Physical Therapy (ANPT). The award is meant to honor ANPT members who have demonstrated extraordinary dedication in providing excellent clinical care to the neurological patient population. The ANPT is one of the fastest growing sections of the American Physical Therapy Association. The section’s mission is to empower its members to optimize movement system performance for those impacted by neurologic conditions. Hersberg’s many contributions include developing the Neurological Physical Therapy Network of outpatient neurological physical therapists and the Neurocollaborative, which brings together neurologic physical therapists to further promote the specialty, as well as her mentorship, teaching entry-level doctor of physical therapy students at USC.

**Division Research on Reducing the Risk of Heart Disease Among Breast Cancer Survivors Published in JAMA Oncology**

New findings from a study conducted by Assistant Professor of Research Christina Dieli-Conwright, PhD ’09, MPH ’17, called “Effect of aerobic and resistance exercise intervention on cardiovascular disease risk in women with early-stage breast cancer” were recently published in the Journal of the American Medical Association: Oncology. Yongwan Lee, PhD ’10, a doctoral candidate in Dieli-Conwright’s Integrative Center for Oncology Research in Exercise, generated the idea and performed the secondary analyses, which was from a study of 100 breast cancer survivors. One group exercised three times a week for 16 weeks while the other did not change their activity level at all. The study determined that patients who participated in the exercise program had a significantly reduced risk of developing cardiovascular disease over their sedentary counterparts. The team will use findings to recommend prescribing exercise as treatment for breast cancer patients and survivors.

**USC Researchers Develop Robotic Leg That Can Learn to Walk**

Professor Francisco Valero-Cuevas and his research team have developed a robotic limb that can learn a new walking task by itself after only five minutes of unstructured play. The findings, outlined in the March cover article of Nature Machine Intelligence, could have profound impacts on everything from space exploration and rescue missions, allowing robots to traverse over dangerous terrain, to physical therapy, allowing for the creation of intuitive and responsive robotic limbs and exoskeletons for patients who have lost the use of their limbs. “Our robots can learn your habits and mimic your movement style for the tasks you need in everyday life — even as you learn a new task or grow stronger or weaker,” Valero-Cuevas said. The research was funded by the National Institutes of Health, the U.S. Department of Defense and the Defense Advanced Research Projects Agency.

**Can Baby Kicks Be the Key to Earlier Cerebral Palsy Diagnosis and Intervention?**

Assistant Professor of Clinical Physical Therapy Barbara Sargent, PhD ’13, has received two grants to investigate whether a particular type of leg movement can be used to diagnose cerebral palsy in early infancy. The movement, selective leg control, is the ability to bend the hip, knee and ankle independently of each other — something typically developing infants learn to do during their first six months. Sargent and her team will compare how typically developing infants and infants at risk for cerebral palsy do three activities — kick spontaneously, reach for a toy with their feet and take steps on a treadmill — to determine if leg movements can be used for early diagnosis. Studies have shown that early diagnosis and intervention can help rebuild damaged brain circuits and change the disease’s long-term effects.

**Kulig Recognized with 2019 USC Mentoring Award**

Professor Kornelia Kulig is one of a handful of recipients of the 2019 USC Mentoring Award for Faculty Mentoring Faculty, Postdoctoral Scholars, Medical Residents and Fellows. The annual award is meant to honor individual faculty members for helping to build a supportive academic environment through mentorship. Kulig joined the division in 1997 as an associate professor of clinical physical therapy. She is one of the division’s nine Catherine Worthingham Fellows and delivered the 18th H.P. John Maley Lecture in 2013. The last division faculty to earn the USC Mentoring Award was Associate Professor of Clinical Physical Therapy Susan Sigward, PhD ’04, in 2010.

**Bo Heris DPT ’20**

Bo Heris has two passions in life: physical therapy and extreme sports. When he’s not studying for his doctor of physical therapy degree, you can usually find him somewhere on the planet, working off some steam by paragliding, surfing, downhill mountain biking or rock climbing. But it’s as a skier/snowboarder that Heris has really made his mark, regularly earning gold medals during competitions, including during the Giant Slalom Snowboard Competition in Iran. We caught up with the downhill daredevil — at a much safer sea-level elevation — to learn more about his adventures on the snowy summits.
The Comeback Marathon

Last year, stroke survivor Wendy Vallejos had hoped to run the L.A. Marathon, but fate stepped in. This year, she made her triumphant return — alongside her USC physical therapist.

When Wendy Vallejos awoke in the hospital, she had no idea she had suffered a stroke or that she had been unconscious for two weeks as a result of a medically induced coma. The last day she remembered was like any other day, really. Vallejos had gone on a hike and to a movie, despite a throbbing headache. During the movie, the headache worsened, her muscles stiffened and she began vomiting. Before she knew it, she was on her way to the emergency room.

“She had so many wires, tubes and drains that it was almost hard to see the person behind them all,” says Sarah Curiel, DPT ’18, who met Vallejos in the Neurocritical Care Program at the Keck Hospital of USC for her initial physical therapy evaluation. The stroke had left Vallejos paralyzed on the left half of her body and unable to breathe on her own.

“That first day, we helped Wendy sit and stand up, which was something she hadn’t done in weeks,” Curiel says. “It was very emotional for her and her family and moving for us to experience with them.”

The physical therapy treatments continued, moving on to sit stand transfers, walking negotiation and overall functional mobility. With each passing day, Vallejos grew stronger.

“It was very moving to see how far she had come in so little time and to see that you’re actually making a difference in someone’s life,” Curiel explains.

One day, Vallejos, who had been a runner since high school, was feeling so good she vowed to run the 2019 L.A. Marathon. When one of Curiel’s classmates volunteered to run alongside their patient, Curiel knew she couldn’t say no and would be running the 26.2 mile race, too. But life had other plans for Vallejos, who needed to have a preventive surgery later that year to avoid another aneurysm rupture.

“When she asked me if I would run it for her instead of with her, it somehow became even more meaningful, so, of course, I couldn’t say no,” Curiel says.

When it came time to sign up for the next L.A. Marathon (in 2019), Vallejos was all in. Not only would she run, her entire family would too. So Curiel signed up.

“Since my original promise was to run a marathon with Wendy, this seemed like a great way to support her and watch her come full-circle in her recovery,” she says.

And so earlier this year, the team set out to complete Vallejos’ "comeback marathon."

“I felt accomplished to have been able to finish another marathon,” Vallejos says. “Every mile, I just felt grateful to be able to put one foot in front of the other once again.”

Even if it was partly because of the tireless work Curiel did with Vallejos to get her back into her running shoes, Curiel insists she’s received even more as a result of working with Vallejos.

“I learned so much from Wendy and her family,” Curiel says. “Wendy showed me that if you really want something and you’re really willing to work for it, there isn’t a lot you can’t achieve.”

INMOTION 10 SPRING 2019

INMOTION 11 SPRING 2019

When did you first know you loved to ski and snowboard?

I started taking group lessons when I was 8. One day after class, I hopped on a chair lift and went to the top of a mountain. I had little skill and was not graceful at all on my way down, but words could not describe how I felt after making it down the mountain in one piece. I knew that day that I had fallen in love with skiing.

What’s your favorite place for snow sports?

My favorite backcountry skiing location is on the Ridge of the Tetons in Wyoming, which has an elevation of 10,450 feet. It is ranked the fifth highest vertical drop in North America. One of the most iconic drops in the world is Corbet’s Couloir.

You are now a snow sport instructor for children. What made you want to teach?

Before becoming a snow sport instructor, I actually taught swimming and martial arts to children. I enjoy being around children as they are full of joy, and there is never a dull moment for me. I enjoy being around children as they are full of joy, and there is never a dull moment for me.

What made you choose a career in physical therapy?

As a former pro athlete, I had to deal with many injuries. With each injury, I was getting further from my goals, and my physical therapists would help me get back on track and expedite my rehabilitation process. A spark ignited, making me realize how rewarding it would be to get someone back to doing what they love and improving their quality of life.

How does your passion for snow sports supplement your career aspirations?

My passion for snow sports has taught me discipline and challenged me to go beyond my abilities every day to enhance my performance. I have learned time management and how to prioritize my goals. My interest in snow sports has also led me to be enthusiastic about treating extreme sports-related injuries.
Rini Varghese recently received a Ruth L. Kirschstein National Research Service Award Individual Predoctoral Fellowship, a prestigious federal pre-doctoral training grant awarded for her research “Characterizing Hemisphere-Specific Deficit in Bimanual Motor Control After Stroke.” The award is one of only four bestowed by the National Center for Medical Rehabilitation Research of the National Institute of Child Health and Human Development in the past five years. Here are five more things to know about Varghese:

1. **Varghese’s Award is the First-Ever F31 Grant Awarded to a Member of the Division.**
   “I am honored to receive this award as it is a recognition by the National Institutes of Health of promising researchers.”

2. **She Was Inspired to Study Stroke Rehabilitation After Having Experiences at a Young Age with Family Members Who Had Strokes.**
   “Most of our routine functional activities involve using both hands together. After a stroke, one side of the body is weakened, and the ability to coordinate and use both hands together is affected, and I wanted to know more about that.”

3. **It Was While Pursuing Her Physiotherapy Studies in Mumbai That She Decided She Wanted to Focus on Research.**
   “I had the opportunity to work in a large government hospital where I had a sizable case load of 20-30 patients a day. It was then that I was inspired to conduct research to improve care and translate that research so that it is accessible to clinicians in even the most challenging settings.”

4. **She Chose USC for Her Doctoral Studies After Meeting Faculty Member and Future Mentor, Carolee Weinstein, at the Annual Meeting of the American Society of Neurorehabilitation in 2014.**
   “I knew that, if I had a chance to work with her, it would be an opportunity that I could not pass up. Having grown in this program over the last four years and learning from our world-class faculty, I am certain that my decision to come here was the right one.”

5. **When She’s Not Busy Conducting Research, She Enjoys Tapping Into Her Creative Side.**

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JON HERNANDEZ DPT ’13
PHYSICAL THERAPIST/ASSISTANT ATHLETIC TRAINER, LOS ANGELES RAMS

While you might have caught Super Bowl LIII from your home over beers, chips and guacamole, Jon Hernandez was actually there at Mercedes-Benz Stadium, watching from the sidelines over the Rams as they battled it out with the New England Patriots in the biggest game of the year.

What are you looking for during the games?
It’s hard not to get caught up in the actual game itself, however we keep a close eye on the entire field before, during and after each play. Injuries and conditions can occur at any point in the game, even if they’re not acute and happen immediately on the field.

This was your first time at the Super Bowl. What was it like?
I made a point to take in the whole experience — not only the game, but also the events during that week leading up to the Super Bowl. You never know when you’ll have this opportunity again. I’m fortunate that I was able to experience it after only working the in NFL for five seasons.

What was the most exciting part of the game for you as a spectator?
The best part of this experience was the journey I took with our team. It may not have been the result we wanted, but I’ll never forget how we got there and the memories we had as a team and organization. From the tragic shooting in our town [Thousand Oaks shooting] to the fires that caused us to evacuate from homes [Woolsey Fire], this organization went through a lot of adversity. And to see us on the biggest stage, knowing what we’ve overcome, it made it that much more special.
A rare inner ear disorder kept Hudson Stimmler bedbound for days on end. After surgery, a USC physical therapist helped him get back on his feet.

BY STEPHANIE CORRAL

A wise old soul
Darakjian completed her neurology residency at USC in 2015, which, along with additional clinical education for vestibular treatment, has allowed her to handle Hudson’s unique case.

“My residency provided me with the mentorship that allows me to assess every individual’s needs and partner with each individual to attain their goals,” Darakjian says. “I was trained to be a critical thinker and use evidence-based practices to provide optimal treatment.”

While his life has begun to return to normal, Hudson says he has learned not to take things for granted.

“I look at something and I try to enjoy it a lot more because I remember a few months ago that I wouldn’t be doing any of this,” he says. Meghan, who describes her son as a “wise old soul,” has been especially amazed by his resilience.

“Obviously there were times when my husband and I would get depressed because you just kept trying to find answers and ways to help him feel better,” she explains. “But it makes me realize how bad he felt because it’s almost like he didn’t have time to get down and feel sorry for himself. He just kept fighting.”

Back to the beach?
Hudson is on track to return to school full-time, but what he looks forward to the most is being able to surf again.

“I’m at the beach right now, and it’s kind of bumming me out that I can’t really do it,” Hudson says, over the phone during a recent family trip to Hawaii — their first vacation since his diagnosis.

“I’m a bit Darakjian is confident that he will be riding the waves soon enough.

“Hudson has been practicing standing on a board,” Darakjian says. “His balance has been improving and, as he recovers from surgery over this year, he will return to swimming initially and then surfing.”

REMINDER: How our brains can make remarkable gains in a short period of time,” she says.

5.00

Remedy: Radical surgery

Despite dietary changes and medication, Hudson’s condition worsened over the summer and led to 14 days of hospitalization.

“Surgery was a pretty radical decision, but we were at the point where he was not responding to anything else,” Meghan explains. In October 2018, Hudson underwent a craniotomy at UCLA Medical Center. The six-hour brain surgery severed his vestibular nerve to prevent his debilitating vertigo.

“The first two weeks were pretty rough, but once we got the pain under control, it’s been super smooth,” says Hudson, who now wears a hearing aid. “I feel a lot better. It’s nice knowing I won’t be getting sick anymore.”

A rapport that works

Since his surgery, Hudson has been working with Nora Darakjian DPT ’14, an instructor of clinical physical therapy, to improve his overall balance.

The Stimmlers chose USC for physical therapy specifically because of USC Physical Therapy’s dizziness and balance rehabilitation services.

“It’s scary having a kid who cannot sit up or walk to the bathroom,” Meghan says. “Once we got to Nora, our home became a safe place for him.”

When Hudson first started working with Darakjian, he could only sit up for five minutes. Thanks to the progressive exercises he has been doing, which includes gaze stabilization training, Hudson can now sit up for hours and run for two minutes.

Hudson credits his rapid progress to the good relationship he developed with Darakjian.

“She has this firm strength that he listens to and respects,” Meghan explains. “I am so blessed that Nora has been his therapist because they have a rapport that just works. I think that’s been a huge part of how much he has progressed.”

Hudson says he enjoys his physical therapy sessions with Darakjian, which sometimes involve obstacle courses.

“She always tries to make me laugh,” he says. “She always makes everything fun.”

Putting in the work

Determined to get better, Hudson is a dutiful student who continues practicing exercises when he is at home.

“I’ve learned that the harder you work, the faster you will get better,” he explains. “If I worked on it extra at home, the next day I’d feel a lot better, and it would be easier. But if I just worked on it the minimum, it would take a lot longer to get better.”

Darakjian says that Hudson is a prime example of the neuroplasticity of the human brain.

“It reminds me how our brains can make remarkable gains in a short period of time,” she says.
TAKING FLIGHT

USC launches new master’s of science in biokinesiology degree program with a sports science emphasis.

BY MICHELLE MCCARTHY

Brayden Hawkins, Lincoln High School sophomore in Stockton, Calif., tests his broad jump, which was 9 foot, 1 inch. The NFL Combine record is 12 foot, 3 inches.

PHOTO BY NATE JENSEN
A technology continues to advance, so too does sports science. Today, practitioners are expected to use technology and data to improve athletic performance and reduce player injury. Translation of technology and data into more effective and efficient care for athletes requires not only foundational work that identifies appropriate applications for technology, but also a workforce of educated professionals who can implement effective technology-driven strategies, according to Susan Sigward PhD ’04, associate professor of clinical physical therapy. To meet the needs of the ever-evolving field, USC has developed a new master’s degree in biokinesiology with a sports science emphasis. The program’s first class of four students graduated in early May.

“Our traditional master’s program instructs students to become researchers and then they typically pursue a PhD,” says Sigward, who serves as director of the new sports science program. “But with the boom of technology, a new generation of sports and exercise professionals who can implement effective technology and data into more effective and efficient care for athletes of all levels.”

The program provides students with a solid understanding of physiological, biomechanical and neurological basis of movement while giving them the advanced skills necessary to excel in a specialized area related to sports and exercise. Graduates will have a theoretical and practical understanding of the concepts and tools used in sports performance assessment and interpretation with respect to injury, injury risk and optimal performance. The sports science emphasis differs from the traditional master’s in biokinesiology degree in that it is designed to teach students how to apply scientific methods in practice. Students still learn the fundamentals of biokinesiology — concepts such as biomechanics, exercise physiology and motor control and behavior — but additional electives (and an internship) help them focus on how to apply those in practical situations.

“Most of the people looking for this sort of education in the U.S. are enrolling in long-distance programs or going to Australia, where the modern realm of sports science started in the 1960s,” Sigward explains. “USC is one of the first programs in the United States that’s truly calling itself a graduate program in sports science.”

One of the first

The new master’s program was created when biokinesiology faculty members recognized the need for graduates to be able to jump right into these careers. “Many sports science programs focus on the strength and conditioning aspects of improving athletic performance,” Schroeder explains. “We wanted to offer a program that also included using new technology, data analytics and applied internships to prepare students to be a part of a comprehensive team that improves health and performance of athletes at all levels.”

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L.A.: Land of opportunity

Nicole Schvery MS ’19, one of the program’s first graduates, says one of the reasons she chose to attend USC is because of its reputation as a leader in the physical therapy field, allowing her more opportunity than ever. “There are so many opportunities with different sports teams where you can apply what you learn in the classroom to a real scenario that wouldn’t be possible anywhere else,” she says.

continued on page 20 »
Another difference of the new program is that students must complete an internship, which allows them to have applied experience in settings that range from college and professional sports teams to biomedical and tech companies. “After learning the methodologies and understanding how to analyze the data, we feel it is important for our students to work with sports teams and tech companies to apply what they have learned,” Schroeder says. Through relationships the division has developed with tech companies and collegiate/professional sports teams in L.A. (see sidebar), students have a wide range of options regarding where to perform their internships. These internship settings are similar to what a student would seek after completing their degree, giving students an opportunity to make valuable connections before they even graduate.

The Flight Lab

And because of a brand-new partnership, they also have access to Jumpman L.A., a 25,000-square-foot facility in Downtown L.A. that is home to the Jordan brand and offers shopping, customization and training. The Flight Lab (located on the store’s second floor) provides students with a space to work on sports science projects while giving back to the surrounding community.

The project came about through Malcolm Jones MS ’19, who worked part-time as a brand ambassador for the Jordan brand. “I introduced Drs. Sigward and Schroeder to one of my bosses from the brand to see if they would be interested in sponsoring science work at one of our USC labs,” says Jones, who is now a manager at the Flight Lab and a PhD student in biokinesiology. “Our goal is for Jumpman L.A to be a hub where our master’s students come in, define a project they want to do and implement it,” Sigward says. “We’ll also be hosting youth education sessions.

“With this equipment, they might test 100 basketball players and investigate the differences in how they jump or land,” Sigward says. “They have a virtual reality treadmill, and one of the projects they’re doing is looking at the metabolic cost of doing a workout on the treadmill with virtual

continued on page 23 »
For Richard Mercer MS ’19, who wants to pursue a career working specifically with sports teams, the master of science in biokinesiology with a sports science emphasis was an ideal fit. “Having the emphasis in sports science is important as it provides recognition that while I am trained in biokinesiology, a lot of my coursework and focus has been on sports science.”

Mercer hopes to use his degree to work in professional soccer. “My studies have been focused on the analysis of sport specific movements, the use of technology to monitor and analyze human performance in healthy athletes and those recovering from injury and the use of technology to monitor training load in team sport environments,” he says. “My dream job is to combine these skills and work as a sports scientist and performance coach for a professional soccer team.”

Mercer is finishing an internship with Pateadores US Soccer Development Academy, an opportunity he landed through connections he made during the program. “I believe the program’s greatest strength is the wealth of experiences that are available to students,” he says. “There is a concerted effort to allow students to follow their interests, whether that is to pursue research, gain practical experience in a lab or working with various forms of technology. Students can easily find the experience to take their skills to the next level towards a career that they are passionate about.”

—Yasmine Pezeshkpour MCM ’16

**Focus on the community**

The space offers free services to the community, such as after-school programs, weekly fitness classes, yoga sessions and basketball or football training. “The Jordan brand wants to push activities and programs for the community,” Jones explains. “They like to integrate and help develop a sense of community. We treat everybody like they’re a professional athlete.”

By hosting adolescents from nearby communities, the Flight Lab not only provides a fun, hands-on learning environment, it also shows sports-loving teens that there are more career options in the sports world than striving to become a professional athlete. “There’s a translation piece of getting the science to them, letting them take ownership of their own bodies and seeing what other jobs in sports exist,” Jones says.

Equipment available at the Flight Lab includes a virtual reality treadmill, a Simi Motion capture system, Bertec force plates, NormaTec boots and a metabolic testing setup — tools that allow student athletes to compare their athletic performance data to their favorite athletes.

According to Richard Mercer MS ’19, another member of the first graduating class, the Flight Lab provides an ideal space for master’s students to be curious and test their ideas. “If you want to test a certain technology, do it at the Flight Lab.” he says. “If you want to hypothesize about a theoretical idea for a project, do it at the Flight Lab. It will be a great space for future students entering the sports science program to build their knowledge and skills.”

**Potential career paths**

The sports and performance science field is rapidly growing, and the outlook for jobs is bright. “In the past few years, we’ve gotten calls from professional sports teams and tech companies from around the country, asking if we have graduating students who might be interested in a sports science position,” Schroeder says. Possible career paths for graduates include working for companies that create sports assessment technology, working alongside a professional sports team or providing rehabilitation in an applied training or clinical setting.

“For a sports team, the sports scientist is the expert liaison between the coaches, strength and conditioning staff and the athletic medicine team,” Schroeder says. “They need to be knowledgeable about many disciplines, know how to analyze data collected with advancements in technology and communicate this information to the team, making it actionable for improving health and performance of the athletes.”

He adds, “Great sports scientists in the tech field will combine their education in biokinesiology and their applied knowledge of the human body to help engineers develop new technology that accurately measures human movement and physiology.”

**continued on page 25 »**
GRADUATE PROFILE
Nicole Schwery MS ‘19

Not everyone can say they landed their dream job right out of college, but Nicole Schwery MS ‘19 can. One of the first students to earn a master’s of science degree in biokinesiology with a sports science emphasis at USC, Schwery has accepted a position as a sports scientist with Training Haus, an elite athletic performance and recovery facility in Minneapolis.

“ I will be in a clinical setting where I get to use various technologies to do research and help people with performance, injury prevention and rehabilitation,” she says.

The type of work she will be doing, working with athletes of all types — anyone who is active, she says — is just one of a handful of career trajectories taken by students graduating with USC’s newest degree. Schwery completed her bachelor’s degree in biological systems engineering at the University of Nebraska-Lincoln before enrolling in the program. She chose to study at USC because of the division’s excellent reputation and the abundance of opportunities available in a city teeming with millions.

“This program has taught me the scientific research foundations and the applicable biomechanics and strength and conditioning aspects needed to work in this field,” she says.

—John Hobbs MA ’14

» continued from page 23

Connected with the right people

Another member of the first graduating class, Karen Hyunji Lee MS ’19, plans to work as a research associate at Stayhealthy, a technology company that creates web-enabled healthcare monitoring products, where she performed her internship. She credits the program at USC with helping her transition from a temporary graduate student intern to a permanent position. “My experience as a part-time researcher prepared me to hit the ground running for my full-time job after graduation,” she says.

“There are a number of opportunities within the umbrella of sports science,” Lee says. “It is important for students to gain exposure to a wide range of these fields to find the one they are passionate about. The program is led by excellent faculty members who guide students to finding the field that suits them best and connects them to the right people.”

For more information on the Master’s of Biokinesiology with Sports Science Emphasis, visit sportsscience.usc.edu.
It’s important for us to have a place to directly explain to normal people what we do and show them how they can apply it to their everyday lives.

—Malcolm Jones MS ’19, on the Flight Lab space, where sports science students can conduct research.

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Click here to be added to the USC Division of Biokinesiology and Physical Therapy Continuing Education mailing list.
Understanding the unique challenges LGBTQQIA+ folks face as patients requires an understanding of the intersection of identity — a concept of self — and biology — a person’s physiology. An accessible route to grasping the complex interactions of identity and biology is to simply walk through the commonly used acronym. In mainstream sources, the shortest version I’ve seen is LGBT, and the longest is LGBTQQIAA+, with any variation in between. For this article’s purposes, I’ll use LGBTQQIA+. The “A” I’m leaving off stands for LGBT “allies.” While we appreciate and need their support, this article isn’t about them, so I’ll focus on LGBTQQIA+. This acronym includes terms describing sexual orientation, gender identity and at least one term describing biological sex. We’ll introduce the terms in these categories:

**SEXUAL ORIENTATION — L: LESBIAN, G: GAY, B: BISEXUAL, A: ASEXUAL**

The Human Rights Campaign defines sexual orientation as “an inherent or immutable enduring emotional, romantic or sexual attraction to other people.” Some of these terms — lesbian, gay and bisexual — may be the most familiar to you. The modern concept of sexual orientation is often attributed to Alfred Kinsey, who wrote his famous Kinsey Reports in the early 1950s, describing how large portions of American men and women either fantasized about or engaged in same-sex relations. He and his colleagues developed the Kinsey Scale, which ranks sexual orientation on a scale from 0 (“exclusively heterosexual”, i.e. straight) to 6 (“exclusively homosexual”, i.e. gay or lesbian), with any value in between.

A person who experiences sexual or romantic attraction to both their own and other genders may identify as bisexual or pansexual. There is also a “null” category, of sorts, describing persons who do not have sociosexual contacts or reactions. In the Kinsey Scale, this is denoted with an “X,” and in our acronym this is described by the term asexual. One way to be inclusive of diverse sexual orientations in the clinic is to avoid assumptions and to use gender-neutral terms like “partner” or “person” instead of “husband,” “wife,” “boyfriend” or “girlfriend.”

**IN MOTION**

28

SPRING 2019

UNPACKING THE LGBTQQIA+ ACRONYM WITH A DISCUSSION ABOUT THE INTERSECTION OF IDENTITY AND BIOLOGY

BY K. MICHAEL ROWLEY PhD ’18

continued on page 30 »
GENDER IDENTITY — T: TRANSGENDER

Gender identity is someone’s innermost concept of themselves as a man, woman, both of them, neither, or something else. For most of us, our innermost concept of our gender matches the biological sex we were assigned at birth. For example, I was assigned the sex of male at birth because I was born with a set of XY chromosomes, external genitalia and testes. I also identify my gender as a man, whatever that means to me and to the society/culture in which I live. Because these matches, I am “cisgender” or “cis.” For someone who was assigned a biological sex at birth that does not match their gender identity, they are “transgender” or “trans.” There are also many people who don’t identify as a man or a woman, but as both of some or neither. This is where you may hear terms like “genderqueer,” “gender non-binary” or “genderfluid.” Sometimes these individuals also identify as “transgender” since the sex they were assigned at birth does not match their gender identity. It’s important to mention that gender identity is beginning to be characterized as a physiological feature of neural pathways, thus putting it at the cutting-edge of how biology and identity intersect. There is new and exciting neuroimaging research that shows important similarities between the brains of trans people and the brains of cis people of the same gender identity. It’s important to consider that gender identity is beginning to be characterized as a physiological feature of neural pathways, thus putting it at the cutting-edge of how biology and identity intersect. Transgender are often referred to as “trans” or “transgender.”

Biological Sex

Anatomy and physiology of an individual’s reproductive system, endocrine hormones and secondary sex characteristics.

Intersex: Individuals born with anatomical variations outside the traditional male-female binary.

Other Identifiers

Queer: Individuals who do not fit traditional gender identities and sexual orientations and seek a broader, more inclusive alternative to the label “LGBT.”

Questioning: Individuals who are in the process of understanding their sexual orientation and gender identity.

Love, acceptance and embracing of all

DECODING THE ACRONYM LGBTQQIA+

SEXUAL ORIENTATION (L-G-B-A)

An inherent or immutable enduring emotional, romantic or sexual attraction to other people.

Lesbian, Gay, Bisexual, and Sexual (and more)

GENDER IDENTITY (T)

One’s innermost self-concept as a man, woman, a blend of both or neither.

Transgender: Individual who does not identify partially or completely with their sex assigned at birth. For example, someone who does not identify with their birth-assigned sex is cisgender.

Biological Sex

Anatomy and physiology of an individual’s reproductive system, endocrine hormones and secondary sex characteristics.

Intersex: Individuals born with anatomical variations outside the traditional male-female binary.

Other Identifiers

Queer: Individuals who do not fit traditional gender identities and sexual orientations and seek a broader, more inclusive alternative to the label “LGBT.”

Questioning: Individuals who are in the process of understanding their sexual orientation and gender identity.

Love, acceptance and embracing of all

OTHER IDENTIFIERS (Q-Q-+)

Queer: Individuals who do not fit traditional gender identities and sexual orientations and seek a broader, more inclusive alternative to the label “LGBT.”

Questioning: Individuals who are in the process of understanding their sexual orientation and gender identity.

Love, acceptance and embracing of all

secondary sex characteristics. All but one of these is changeable through HRT and surgical interventions. And not a single one is binary. Sex chromosomes can be found in at least six variations — the traditional XX and XY as well as X, XXV, XY and XXX. Nonbinary variations in genitalia and gonads also exist, including vaginismus, ovotesticulism, mixed or complete gonadal dysgenesis and hypospadias. Sex hormone variations include conditions such as androgen insensitivity syndrome and adrenal hyperplasia.

The American Journal of Human Biology in 2000 published a review of medical literature from 1955 to 1998 and reported that 1 in 100 births exhibited at least one of these variations. Those individuals fit the definition of intersex, not conforming to a standard definition of male or female. Many activists are concerned about the incidence of cosmetic surgeries on infants to normalize the appearance of their genitalia, sometimes even without informing parents. This study collected data from 1 to 1,000 newborns received such surgery, equating to about 0.65 per year in the United States.

Other Identity Terms — Q: Queer, Q: Questioning and Q+: Inclusivity

The term “queer” is often used as an umbrella identity for any sexual or gender minorities who are not heterosexual or cisgender. In the past, queer was a slur used to reclaim the once derogatory label “queer” in the 1980s, it is now used to reclaim the once derogatory label “queer” in the 1980s, though the LGBT community began to reclaim the word to unify and distinguish the community. Today, people who seek a broader and perhaps deliberately ambiguous alternative to the traditional LGBT labels may describe themselves as queer. Because of the former negative connotations of the word, it is always a good idea to let someone identify themselves as queer before using the word to describe them.

Questioning is an important part of the acronym and may represent the largest group of individuals in any of the identities discussed so far. Understanding our own sexual orientation or gender identity is a process and may be fluid, especially in a society where the default assumption is heterosexual and cisgender. A study by Ott et al. in Archives of Sexual Behavior (2019) followed 11,840 persons over 13 years and reported 2 percent described being “unsure” of their orientation at some time. Being unsure or questioning also doesn’t mean someone will necessarily identify as LGBTQ+. This study, similar to the aforementioned study by Ott et al., found that 10 percent identified as “unsure” of their orientation at some time. Being unsure or questioning also doesn’t mean someone will necessarily identify as LGBTQ+. This study, similar to the aforementioned study by Ott et al., found that 10 percent identified as “unsure” of their orientation at some time.

Be supportive. Gender identity and sexual orientation may change over time. It is important to remain supportive and non-judgmental when working with patients.
Only 5 percent of practicing physical therapists are African American. Melodie Daniels DPT ’21 hopes to change that, serving as a role model to other people of color.

BY JAMIE WETHERBE MA ’04

Melodie Daniels’ DPT ’21 drive to become a physical therapist is stronger than most.

“For me, being able to have a successful career in this field — it was like eating,” the 24-year-old says. “It was something I was craving.”

Daniels, an experienced personal trainer and athlete, recently started USC’s hybrid DPT program, a new format that combines online learning with in-person, hands-on immersion experiences.

Leading the way

“USC really strives to be diverse and looks for opportunities to improve. But right now, I’m the only black girl in the [hybrid] program,” says Daniels, who also serves as the hybrid DPT class president.

Physical therapy is known for having incredibly low numbers of African American professionals. Only 5 percent of practicing physical therapists are African American, according to the U.S. Bureau of Labor Statistics. The percentage of African Americans in physical therapy education programs has hovered around 3 percent throughout the past decade, according to the Commission on Accreditation in Physical Therapy Education.

“The idea of being able to use my story to help other people drives me,” she says. “It’s important to pave the way and show other minority women that this [career] is an option for them.”

A difficult road

While Daniels was committed to becoming a physical therapist, her determination was tested along the way. After receiving a bachelor’s degree in physical therapy from San Diego State University, she applied to 20 physical therapy programs and was rejected by each one.

“I spent $5,000 on applications and didn’t get in. My GPA just wasn’t there because I had to financially support myself,” Daniels explains.

To put herself through school, Daniels worked full-time as a personal trainer at 24 Hour Fitness. A typical day would start at around 3 p.m., with Daniels’ schedule alternating between clients and classes until about 10 p.m.

“And then I would wake up and do it all over again,” she says. “I worked so much during the first two years of my undergrad that I almost got kicked out of the program. It was really rough.”

To stay in school, Daniels wrote a letter, expressing her dedication to the program and profession.

“From then on, I still worked just as much, but I pretty much never slept and got straight A’s until I graduated,” she says. “I wanted to do it; PT is one of the few things in life I’ve never questioned.”

To remain on her path, Daniels launched her online personal training business, became a certified yoga instructor, and graduated from Point Loma Nazarene University, with a master’s in sports performance, which gave her the experience needed to join USC’s physical therapy doctoral program.

“That process of having to fight taught me that I really love PT,” she says. “It’s an incredible opportunity to help people through movement and make an impact in their lives.”

Daniels says her drive comes from watching her mother. “She was a single mom at 15 and only had an eighth-grade education,” Daniels says.

About a year ago, Daniels says her mother completed her PhB in nursing.

“She’s someone who, regardless of circumstances, makes things happen,” Daniels says. “If the plumbing went out, she would fix it; if I needed a dress, she would sew it; if we needed food, she would grow it. I saw that work ethic — she’s my biggest role model for sure.”

Reaching for diversity

Still, being a minority, especially in the medical field, can be a challenge.

“Some people automatically don’t trust you because of how you look, and it’s unfortunate,” she says. “USC constantly talks about reaching out to people of different races and backgrounds and how diversity adds value to the profession. I think more schools need to do that so people [of color] feel comfortable applying.”

To draw more minorities to the physical therapy profession, Daniels would like to see more outreach at high schools and colleges, as well as discussions around diversity being incorporated into curricula.

Daniels recently attended a speaker series at USC in which professors from a variety of backgrounds, including African Americans, shared their experiences.

“It was eye-opening for students to hear about some of the struggles these professionals faced because of their background or race,” she says. “When I have the time, I’d like to do more public speaking and be able to talk to [young] people more one-on-one.”

For now, Daniels remains focused on her end goal: owning her own business.

“I’m nurturing my online personal training as much as I can, so I can transition that into a private practice when I graduate,” she says. “I’d like to combine physical therapy with personal training and include other practitioners — chiropractic, massage therapy — for a holistic, integrated approach.”

“USC really strives to be diverse and looks for opportunities to improve. But right now, I’m the only black girl in the [hybrid] program,” says Daniels, who also serves as the hybrid DPT class president. Physical therapy is known for having incredibly low numbers of African American professionals. Only 5 percent of practicing physical therapists are African American, according to the U.S. Bureau of Labor Statistics. The percentage of African Americans in physical therapy education programs has hovered around 3 percent throughout the past decade, according to the Commission on Accreditation in Physical Therapy Education.

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PROTECTING the PROTECTORS

USC alumna finds a way to give back through tactical physical therapy.

BY MICHELLE McCARTHY

A typical day for a physical therapist might include assessing injuries, developing treatment plans and helping patients regain mobility. But if you’ve gone into tactical physical therapy, you might also accompany a narcotics team as they conduct a bust, witness a fugitive being removed from a house or try on 75 pounds of bomb gear.

These are all scenarios Sarah Greytak DPT ’07 has experienced at her job with the Denver Police and Denver Sheriff Departments.

“A tactical physical therapist deals with tactical athletes, which are those who put themselves in harm’s way to assist others in the course of their job,” she explains. “That includes military, paramilitary, firefighters, police officers, sheriffs and corrections officers.”

Greytak credits her “think-outside-the-box” training at USC with preparing her for her current role. “We don’t ever see the same problem twice, so that’s been big,” she says. “Your entire third year of physical therapy school at USC was learning to think for yourself and not follow a prescription set by somebody else. USC taught me to be able to determine what I need to fix, try to fix it and then retest it.”

Understanding the struggles

Before taking the position with the Denver Police and Sheriff Departments in 2008, Greytak worked in traditional outpatient orthopedics. Four years ago, she moved to Colorado and met Casey Stoneberger, who was instrumental in getting the Denver Fire Department physical therapy program off the ground. As a result of the program’s success, the city wanted to expand services to law enforcement officers.

“The opportunity came up, and it was a perfect fit, so I made the jump,” she says. “I’ll never go back.”

Treatment of tactical athletes as opposed to standard patients is different because of the former’s job demands. And it’s not all physical. While police officers are expected to be in top-notch physical form, there’s also a demanding mental aspect to the job. “There’s a culture to the police department,” Greytak explains. “We understand the struggles they’re going through.”

That’s why the team of five physical therapists goes out into the community with officers at least once a month to witness the physical demands of the job, firsthand. “We get to actually see what they do on a daily basis,” she says. “See what their functional movement patterns are. And then, we get to try to fix those.”

“Sarah was a critical piece in my physical recovery, but she was also instrumental in my mental and emotional healing,” says sergeant Bobby Waidler of the Denver Police Department, who had two herniated discs in his back from the weight of his duty belt. “She became part of my support system as a caregiver, body worker, counselor, confidant, educator, personal trainer and fitness mentor, health advocate and trusted friend,” he says. “Sarah speaks our same language, and her message reaches us and lands because she has immersed and integrated herself in our culture. Officers are willing to be vulnerable and open up with people they trust. They trust Sarah.”

Unexpected injuries

For Greytak, watching police officers in the line of duty has been eye opening. Fifty percent of an average patrol officer’s job is spent sitting in a patrol car.

PHOTO BY BRIAN WEISTER
PHOTO BY BRIAN WEBSTER

belt that can weigh between 16 and 33 pounds. The most common injury the physical therapy team sees are to shoulders, which occur while apprehending suspects and from slips and falls during chases. They also treat a number of chronic back pain cases as a result of prolonged periods of time.

“We do typical treatments such as manual therapy, mobilization, instrument-assisted soft tissue immobilization, cupping and dry needling,” Greytak says. “But on top of that, we do sandbag unloading. If you just had shoulder surgery, you’re kind of nervous about going back to physical therapy school after years of dancing, but it had always been my plan to do so. I was really grateful to be accepted to USC’s program. I feel I got the best education at USC, and I met some of my very best friends.”

After graduation, I got my dream job at the Harkness Center for Dance Injuries with Dr. Harriane Leidbach. While there, I had the privilege of working with professional and pre-professional dancers, both in the clinic and backstage at various Broadway shows and professional dance performances. I taught continuing medical education presentations by the International Association for Dance Medicine and Science (IADMS) in my region.

A heart for service

“While there, I worked with Dr. Jan Dodden to help establish a dancer clinic. I taught physical therapists and physical therapy students how to incorporate Pilates into their practice both at the Cleveland Clinic and at Cleveland State University. I was also a teacher and a business owner in my region’s dance department.”

Maga — and we use a virtual-reality shooting range. We can simulate various scenarios that officers are going to go through: weapon reloading and unloading.

If you just had shoulder surgery, you’re kind of nervous about that, so we take them into this virtual-reality world, where we can then go through training with them to make sure they’re prepared.”

Eighty percent of a typical day for Greytak is dedicated to treating individuals, much like an average outpatient orthopedic clinic. The remaining time is spent dealing with walk-ins and performing outreach within the community of officers. The city of Denver employs 1,400 officers between the police and sheriff departments, but the physical therapy team also works with civilians in the department and the new recruiting class. In total, there are approximately 1,800 to 2,000 employees. In an average month, the Denver police and sheriff physical therapy clinic logs around 220 visits.

“A heart for service

“The officers love it,” she says. “They trust us and know we have their best interest at heart. They want more. We’re booked. And they want to be there. They’re dedicated to getting better. A program like this is important because being able to understand the specificity of each person’s job is huge. I think that’s where the field of physical therapy is going, whether you work as a factory worker or a cop, or you’re an officer in harm’s way every day.”

Greytak hopes physical therapy services such as the ones offered at Denver PD will spread to other cities. There has been a huge positive response so far, not only on the cost-saving side, but in terms of officers’ satisfaction. “We’re hoping it grows like wildfire.”

Anyone interested in tactical physical therapy should possess a heart of service. You may have to work off-hours or squeeze in people on your lunch. But Greytak wouldn’t have it any other way.

“My opportunity to serve those who serve our community,” she says. “I get to give something back to them. I’m not out on the streets protecting people, but I’m helping to protect those protectors. I take care of the people who go out every day in harm’s way, for me and for my fellow civilians.”

Greytak performs a range of motion and manual therapy on a Denver detective four weeks after rotator cuff surgery.

PHOTO BY BRIAN WEBSTER

• continued from page 35

car. But at a moment’s notice, he or she needs to be able to get up, make quick decisive actions under stress, run, jump, climb fences, run stairs, chase people down and sometimes fight with individuals. This is all done without a warm-up and while wearing a duty belt that can weigh between 16 and 33 pounds. The most common injury the physical therapy team sees are to shoulders, which occur while apprehending suspects and from slips and falls during chases. They also treat a number of chronic back pain cases as a result of prolonged periods of time.

“We do typical treatments such as manual therapy, mobilization, instrument-assisted soft tissue immobilization, cupping and dry needling,” Greytak says. “But on top of that, we do sandbag unloading. If you just had shoulder surgery, you’re kind of nervous about going back to physical therapy school after years of dancing, but it had always been my plan to do so. I was really grateful to be accepted to USC’s program. I feel I got the best education at USC, and I met some of my very best friends.”

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Greytak performs a range of motion and manual therapy on a Denver detective four weeks after rotator cuff surgery.

PHOTO BY BRIAN WEBSTER

• continued from page 35

Greytak performs a range of motion and manual therapy on a Denver detective four weeks after rotator cuff surgery.
“My experience at Fit Families has taught me about my potential as a physical therapist to help bend someone’s life trajectory toward a more whole and accomplished human experience.”

PHOTO BY NATE JENSEN

Looking back at my experience with the USC Fit Families program over the past 15 years, I can recall the many success stories that I have witnessed. There is the 17-year-old community activist, who walked through our doors just looking for a safe place to exercise but instead remained an engaged participant for many years thereafter. We have witnessed her personal growth through various life events such as high school graduation, the birth of her first child, graduate school and current professional pursuits.

There is the shy, melancholy, withdrawn teenager dealing with family challenges, who learned to deliver a confident handshake and professional pursuits. She went on to forgo services that many families are forced to access to these services. Fit Families grew out of communities that would otherwise not have access to these services. Fit Families grew out of the multiple human element, our personal life experiences and expertise lies in the skillful application of the human spirit and each new experience there forgo services that many families are forced to access to these services. Fit Families grew out of communities that would otherwise not have access to these services. Fit Families grew out of the multiple human element, our personal life experiences and expertise lies in the skillful application of the human experience. Those experiences from my childhood are the reason I am a physical therapist today, and I bring those into the clinical realm to try to understand the unique challenges that each individual faces on their journey toward achieving optimal health.

I am motivated daily by my own life lessons and by the resilience I observe at Fit Families. Equipped with those lessons, I work daily to seek opportunities to bring my expertise to communities that would otherwise not have access to those services. Fit Families grew out of that spirit and each new experience there helps to become a better physical therapist. That is why I became a physical therapist to continue trying to make a difference in someone’s life.

My experience at Fit Families has taught me about my potential as a physical therapist to help bend someone’s life trajectory toward a more whole and accomplished human experience.”

1987
Suzanne (Roh) Freeman’s MPT ’87 co-authored manuscript, “Astym Therapy Improves FOTO Outcomes for Patients with Musculoskeletal Disorders” has been accepted for publication state, observational study compared 9,400 patients, who received Astym therapy as part of their treatment, with 3,400 matched controls and found a statistically significant difference in outcome measures. This paper will be available via open-access journal this summer.

1998
Matt Booth ’95, DPT ’98 led a group of 6 practitioners to spread manual therapy treatment in Belize in March. Six practitioners trained in Fascial Distortion Model (FDM) helped six Belizean physicians learn this new style of assessment and treatment using FDM. There are only two physical therapists in the whole country of Belize, which is the size of state of Maryland, with a total population of 400,000. Prior to this experience, the only treatments available for musculoskeletal conditions from the physicians was NSAIDs, injections or surgery. After learning FDM, the team went to smaller villages and treated 100 patients in 2.5 days, with 95 patients having significant improvement in their condition. The physicians and patients plan to go back yearly and train physicians in FDM manual therapy in the four other regions of Belize.

2004
Leigh Langerwerf DPT ’04 and Cassi Langerwerf welcomed their fifth child, Emily Marieke Langerwerf, born on March 15, 2019.

2006
Kimiko Yamada DPT ’06 presented at the USC Emeriti Center Wellness event on March 12, 2019 at USC’s University Park Campus. DPT students and faculty held workshops and screenings for nearly 65 participants. The next event will be held Aug. 19 on the Health Sciences Campus. Other alumni faculty presenters included Janelle (Drogue) Gilmer DPT ’06, Kelsie Kalsur DPT ’17 and Jacquelyn Dyta MPT ’94, DPT ’01.

2009
Jason Preuschoff DPT ’09 and Tiffany Preuschoff DPT ’09 are expecting their second child late May.

2014
Simon Orozco MPT ’14 was awarded a Ruth L. Kirshstein National Research Service Award for pre-doctoral research in neuromotor control at Johns Hopkins University.

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.

Go to our “Stay Connected” form.