TWO PATHS
ONE DEGREE
RESIDENTIAL VS. HYBRID
TWO DAYS IN THE LIFE
Assistant Professor of Neurology Dominique Duncan demonstrates the Virtual Brain Segmenter, a virtual reality-based method for dividing brain images using MRIs into specific anatomical structures, as part of the inaugural USC Virtual Technologies for Health Symposium. The day-long event brought together USC researchers from various disciplines — including rehabilitation science, engineering and neurology — to showcase how their VR projects might help improve the health of people with disabling conditions such as stroke, Alzheimer’s disease and Parkinson’s disease. Assistant Professor James Finley, Professor Carolee Weinstein MS ’84 and Assistant Professor Sook-Lei Liew MA ’08, PhD ’12 each delivered presentations at the symposium.

PHOTO BY GLENN MARZANO
Browsing through this and other issues of *inMotion*, one can’t help but be impressed by the breadth and diversity of our division’s activities.

We have outstanding researchers who are blazing new trails, using innovative methods and cutting-edge technologies. Our clinical practices excel in traditional areas of physical therapy and lead the profession into newer areas of practice, such as oncology, pelvic floor, dizziness and professional sports. Our alumni never to cease to amaze us, finding personal and professional fulfillment in activities as different as rock climbing and Polynesian dancing. Division faculty, students and alumni are leaders in our professional organizations, nationally and in the state of California.

But if we burrow through all of these stories — to the deepest core of our enterprise — we find teaching. Teaching is our raison d’être — why we formed as a department more than 70 years ago and what drives us forward into the future. Our primary purpose is to teach students. All our other undertakings circle around that activity like the planets orbiting the sun.

With all that is happening at USC in the past few years — much of it in the category of negative publicity — it is easy to lose track of the positive developments. One of those is a renewed attention to teaching across the university. This initiative began with a call by the university provost and other faculty leaders to replace the traditional student course-evaluation system with better methods of evaluating teaching effectiveness. Now, faculty across the university are collaborating to develop innovative new approaches to evaluating and improving faculty teaching.

Here in biokinesiology & physical therapy, our faculty have taken this initiative to heart. We take pride in our teaching, but we also understand that we can be much better at it. We have started with a collaborative process to develop our own definition of excellence in teaching. Using this definition as a foundation, we will develop a variety of methods to evaluate and improve our teaching methods. These approaches will be tailored to the very specific challenges we face in teaching physical therapy. In the next year, you will hear much more about our progress in this endeavor.

At USC, we always strive for excellence, and excellence is, by definition, a state of always trying to get better in what we do. Thus excellence has the peculiar quality of never being achievable, because when we get there we find that we still have to strive to be better. It may not be satisfying, but it’s exciting!

*Janna Gordon*

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

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MAYA ACOCELLA DPT ’21  
DPT@USC HYBRID STUDENT

Maya Acocella chronicled a couple of days of her life as a hybrid student for our “2 Days in the Life” cover story comparing the residential to the hybrid tracts to the DPT.

What did you learn through the process of chronicling your days for inMotion?

I actually learned a lot about myself! I always thought my days were fairly boring until I documented my activities for the day.

What do you like to do in your free time?

I like to play piano and listen to music. I spend a lot of time at the gym, since I’m a “retired” gymnast now. The last thing I like to do in my free time is play video games; they’re a great way to relieve stress!

What made you choose physical therapy as a career?

I was an athlete my entire life, so I’ve had my fair share of injuries, which equated to a lot of time spent in a physical therapist office. I also always knew I wanted to help people and be in the medical field. I don’t like blood, so I thought physical therapy was the perfect medium!

CHERI CHAN DPT ’21  
RESIDENTIAL DPT STUDENT

Cheri Chan represented the residential student for our “2 Days in the Life” cover story comparing the residential to the hybrid tracts to the DPT.

What was it like chronicling your days for this issue’s cover story?

I found it helpful to take a moment to reflect on what we go through as students in this rigorous DPT program. Often, I get so caught up with the next assignment or exam that I don’t take the time to see how much I’ve accomplished and learned.

What do you like to do in your free time?

I enjoy going to the gym and doing Olympic weight lifting training. Before school started, I used to explore new restaurants or travel. I still try to eat at new restaurants when I can, since there are so many delicious places to try here in L.A.!

What made you choose physical therapy as a career?

Growing up, I played many sports and faced a few injuries. Going through physical therapy myself made me initially want to pursue this path because I wanted to work with athletes and help people like me get back to their sport.

FRANK SWEENEY DPT ’18  
“MY INSPIRATION” COLUMNIST

Frank Sweeney has gone on two service trips (with more ahead) to the San Gabriel Orphanage in Ensenada, Mexico. The PhD student shares what drives him on these trips in this issue’s “My Inspiration” column.

What was it like writing this column for us?

It was such a pleasure to write this column. As a PhD student, I am constantly inundated with scientific writing, so it’s a nice break to be able to indulge my creative side and spread the word about the San Gabriel Orphanage trips!

How did you get your start doing these service-learning trips, and what’s kept you going on them?

I firmly believe that service-learning isn’t an elective — it’s a critical component of any health care practitioner’s education. Trips like these are examples of community action. They help to engender cultural competence and empathy into the doctor of physical therapy curriculum.

Give us a fun fact about you.

During my undergraduate years, I spent a few months in the mountains of Peru, where I helped to deliver more than 40 babies!
USC physical therapy students learned the importance of advocating on behalf of the profession to federal and state lawmakers.

FEATURES

A FATHER’S LOVE 14
BY STEPHANIE CORRAL

Shaun Kalpakoff was diagnosed with ALS a year ago. Eager to prolong the onset of the disease’s effects to give him more time to play with his 10-year-old son, Kalpakoff sought treatment at USC’s interdisciplinary ALS Clinic.

READY PLAYER ONE 22
BY MICHELLE McCARTHY

Assistant Professor of Research Christopher Laine teamed up with computer scientist Brian Cohn MS ’18 to develop Amplify, a gamified speech therapy program for children with cerebral palsy, coming to a voice assistant near you.

A MORE COMFORTABLE WORKSPACE 26
BY KATHARINE GAMMON

With repetitive hand motions and hours often spent hunched over their patients, dental professionals are at a high risk for musculoskeletal disorders. A new unique collaboration between USC physical therapy and dentistry aims to train dental students about proper form early, easing pain and prolonging dental careers.
Assistant Professor of Research Christina Dieli-Conwright was awarded a $4-million grant to investigate whether exercise improves prognosis for survivors of breast cancer.

BY YASMINE PEZESHKPOUR MCM '16

They have already endured so much, having fought breast cancer and won.

But the way breast cancer is treated can lead to a host of other issues, including high blood pressure, diabetes and obesity, all of which can further threaten a survivor’s health and perhaps lead to breast cancer recurrence.

What if there was a way to prevent breast cancer recurrence without additional medication or invasive treatments?

That’s exactly what Assistant Professor of Research Christina Dieli-Conwright is investigating with a new exercise study that was recently awarded a $4-million National Institutes of Health grant.

“Inflammation in adipose tissue is dangerous because it’s been noted to aid in the growth of cancer or contribute to its recurrence. “Since obesity is such a huge risk factor for poor cancer prognosis in breast cancer survivors, this will be a unique opportunity for us to be able to answer some questions related to why obesity is so harmful,” she said.

Participants will be randomly sorted into three groups.

The first group will partake in traditional aerobic exercise followed by a set of resistance exercises.

The second group will participate in high-intensity circuit training. They will cycle through intervals of aerobic and resistance exercises at a quicker pace.

The third is the control group, which will not be required to exercise and will maintain their current lifestyles.

All workouts will take place under the supervision of certified cancer exercise trainers in Dieli-Conwright’s Integrative Center for Oncology Research in Exercise Laboratory for approximately 75-150 minutes a week, as suggested by the American Cancer Society.

“We treat exercise as a drug, so we prescribe it as systematically and precisely as we can, so that we know we can measure the effectiveness,” she said.

The exercise study is 12 months, but Dieli-Conwright will follow participants for even longer to observe survival outcomes.

FIRST OF ITS KIND

The study is the first and largest of its kind in which a biomarker in fat tissue is being targeted with exercise in cancer survivors.

For the study, Dieli-Conwright will partner with Steven Mittleman at UCLA’s Mittleman Laboratory to examine fat biopsies taken from participants before and after the study, as well as during a follow-up.

Mittleman will be involved in analyzing the biopsies to determine what is happening to the fat tissue through the various stages of the exercise study.

“If the fat tissue is so problematic during survivorship, then we’re hoping that this will give very specific evidence on how we can approach exercise in the future for breast cancer survivors,” Dieli-Conwright said.

If research shows that the high-intensity exercise group experiences greater reductions in fat-tissue inflammation than the traditional exercise group, it could one day impact how health care professionals approach exercise for survivors of breast cancer.

“Based on previous work, exercise has a profound impact on the survivor’s quality of life, outlook on prognosis, ability to have social interactions and confidence,” Dieli-Conwright said.

“Even though this is not a behavioral study, the participants are going to learn a lot along the way that hopefully gives them self-efficacy to exercise and lead healthier lives.”
RESNIK, 2018 STEVE WATSON AWARD WINNER

Associate Chair and Associate Professor of Clinical Physical Therapy Cheryl Resnik DPT ‘97 took home a 2018 Steve Watson Award from this year’s CPTA annual conference. The award is meant to recognize CPTA members who have demonstrated dedication, enthusiasm and creativity in service of California’s physical therapy political action committee. What made her stand out is “her creation, organization and implementation of a program in which entry-level doctoral candidates in physical therapy conducted local visits to legislators in Southern California,” wrote Paul D. Smith, CAL-PT-PAC chairperson. Resnik began this program at USC, allowing students to be taught the strategies of effective advocacy and the importance of championing physical therapy.

PHD CANDIDATE RECEIVES TRAINEE PROFESSIONAL DEVELOPMENT AWARD

Rini Varghese has been selected to receive the 2018 Nancy Rutledge Zahniser Trainee Professional Development Award by the Society for Neuroscience. The awards are presented to students who have demonstrated scientific merit and excellence in their research. It is meant to allow early-career researchers to present a scientific abstract at a poster session, network with peers and senior scientists and participate in learning experiences at the Society for Neuroscience’s annual meeting. Varghese, a biokinesiology PhD candidate, presented her research abstract titled, “Interlimb differences during bimanual aiming after stroke: Effect of target distance,” in early November. The abstract was co-authored by Professor Carolee Winston MPT ’84 and Associate Dean James Gordon.

SIMPSON APPOINTED CPTA CHIEF DELEGATE

Assistant Professor of Clinical Physical Therapy Michael S. Simpson DPT ‘09 has been appointed chief delegate for the California Physical Therapy Association. “I feel one of the most important issues facing our profession is public identity,” Simpson said in his candidate statement. “I am optimistic and motivated to continue to increase our public identity as a profession as we enter our next century.” The chief delegate is responsible for organizing and leading the California chapter delegation in all deliberations relative to annual APTA House of Delegates activities. Simpson also serves on the CPTA board as a secretary alongside other Trojan physical therapists including Professor Chris Powers PhD ’96, Assistant Professor of Clinical Physical Therapy Valerie Teglia and Adjunct Instructor of Clinical Physical Therapy Chukwemueka Nwigwe.

SUM EARNED ASSET FOUNDER’S AWARD

Assistant Professor of Clinical Physical Therapy Jonathan Sum ’01, DPT ’05 has been recognized with a Founder’s Award by the American Society of Shoulder and Elbow Therapists (ASSET). The award is meant to recognize individuals who have been instrumental in both the conception and ongoing development of the professional organization. “[The] American Society of Shoulder & Elbow Therapists proudly recognizes Jonathan Sum for fusing vision, leadership, generosity and selflessness to nurture our unique society,” the Founder’s Award plaque reads. ASSET is a group of physical therapists, occupational therapists and athletic trainers that serves as a leading source of knowledge regarding exemplary clinical care and outcomes-oriented research in shoulder and elbow rehabilitation.

WINSTEIN ELECTED FELLOW OF NATIONAL ACADEMY OF KINESIOLOGY, AMERICAN SOCIETY OF NEUROREHABILITATION

Professor Carolee Winston MPT ’84 has been elected Fellow of the National Academy of Kinesiology and the American Society of Neurorehabilitation, two honors reserved for those at the pinnacle of their profession. The National Academy of Kinesiology is an organization geared toward encouraging and promoting the study and educational applications of human movement and physical activity. The American Society of Neurorehabilitation is an organization that aims to promote the health of people living with disabling neurological disorders. Winston has dedicated her decades-long research career to improving the lives of patients with neurological disorders, particularly in the area of motor learning and rehabilitation of patients after stroke. She is an APTA Catherine Worthingham Fellow and an American Heart Association Fellow.

In 2009, she delivered the Mary McMillan Association Lecture.

DIELI-CONWRIGHT TO STUDY EXERCISE’S IMPACT ON COGNITIVE FUNCTION IN WOMEN WITH BREAST CANCER

Assistant Professor of Research Christina Dieli-Conwright has earned a $162,000 grant from the American Institute for Cancer Research to study how high-intensity interval training influences cognitive function in women with breast cancer. Research already suggests that exercise reduces cognitive decline and improves cognition in elderly adults as well as those with Alzheimer’s or Parkinson’s disease. Building upon that, Dieli-Conwright aims to investigate how exercise might affect cognitive health, which is often impaired as a result of chemotherapy. Dieli-Conwright and her team will compare the cognitive function of two groups of survivors of breast cancer undergoing chemotherapy — one group will have completed three weekly high-intensity interval training sessions for 16 weeks while the other will make no changes. Results could not only improve life for survivors of cancer but also reduce neurodegenerative disease mortality later in life.
Assistant Professor James Finley has been awarded an NIH grant to better understand walking rehabilitation for survivors of stroke.

BY JOHN HOBBS MA ’14

Every 40 seconds, someone in the United States has a stroke. And while it is the fifth leading cause of death in America, it is often more disabling than it is fatal.

Physical therapy for stroke survivors can often mean treatment focused on correcting walking asymmetries (such as a limp) so that the individual can walk in an observationally normal way.

But is this best rehabilitation strategy? That’s what Assistant Professor James Finley aims to investigate in a new study that was recently awarded a $1.6 million grant from the National Institutes of Health.

The study, titled “Toward a Mechanistic Understanding of Optimization Principles Underlying Hemiparetic Gait,” will examine the advantages and disadvantages associated with restoring symmetry in the walking patterns of survivors of stroke.

Using a device to measure oxygen consumption, treadmills meant to elicit a stumble response and a motion capture system to record it all, Finley hopes to better understand how correcting gait asymmetries impacts energy efficiency and fall risk.

“One thing we would like to do is assess the individual and find the focus areas for how to rehabilitate them,” Finley said. “How can we help an individual reduce energetic costs so they can walk longer distances? Can we train people to have a walking pattern that would lower their risk of falling?”

CHANGING THE PARADIGM?

Finley’s findings could change the paradigm for how survivors of stroke are treated and help physical therapists better personalize walking rehabilitation.

For the study, Finley will partner with Stefan Schaal, a professor of computer science and biomedical engineering at the USC Viterbi School of Engineering, to develop computer models of walking in people post-stroke.

“One of the most exciting parts of this work is that there are computational techniques that we can leverage to observe a behavior and ask questions like, ‘What is the relative contribution of different factors to that behavior,’” Finley said. “How much might this walking pattern be meant to maximize stability, or how much might be driven by energetic costs?”

The long-term goal would be to develop predictive models to be able to determine what walking patterns might be best for a survivor of stroke, he added.

“Ultimately, we want to improve people’s quality of life by giving them increased mobility,” Finley said. “If we can give them the confidence to move through environments that may be more challenging, then we can get them out of the house and into their communities, allowing them to have a more independent life.”

Serving as co-investigators on the four-year study are Associate Professors of Clinical Physical Therapy Julie Tilson DPT ’98, MS ’09 and Todd Schroeder PhD ’00 as well as Adjunct Assistant Professor of Clinical Physical Therapy Sara Mulroy MS ’89, PhD ’95.
You can bet that Marie Calvet is the life of any luau she goes to. The Honolulu native began hula dancing (hula is Hawaii’s native dance form and is known for slow graceful movements) when she was barely bigger than the kitschy plastic hula girl you might find mounted on a car’s dashboard. Since then, she has expanded her repertoire to include Tahitian dance (native to the Tahiti islands, known for fast hip shaking driven by thumping drum beats). Though college left little ... ahem ... wiggle room in Calvet’s schedule for Polynesian dance, she got her groove back after finishing her doctor of physical therapy degree, performing and competing with a local Tahitian dance group.

Continued on page 10 »
How long have you been Polynesian dancing?

Growing up on Hawaii, I danced hula mostly at school. My first class was probably when I was 4 or 5 years old. My middle school and high school offered a dance program, so I danced pretty much all through that. I took a little bit of a hiatus when I moved to California for college, but I would still dance occasionally — at the USC Hawaii Club’s annual luau, and I taught some of my classmates how to Tahitian dance at a few luau events during physical therapy school.

What’s the greatest level of success you’ve enjoyed with your dancing?

A couple of highlights was a few of the people from my dance group, Te Aho Nui, were in the Rose Parade in 2017. That happened to be the year USC was playing in the Rose Bowl, so we saw so many USC fans. During my last competition, Te Mana Ori, I was able to get second place in my age group for a solo competition, which is where you have to improvise on the stage to different drum beats. See video 3 above.

What’s your signature move?

Fa’arapu. It’s the circle you make with your hips, but you do it really fast. It’s one of the most difficult moves, but it’s one of those classic Tahitian dance moves that we all try to incorporate. Watch Calvet’s fa’arapu here.

In what ways have you tried to incorporate dance into your physical therapy practice?

When I was a student, we had a volunteer patient who had previously been a hula dancer. She had a stroke several years prior to seeing us. But when I found out she did hula, I actually incorporated it into her treatment sessions. It was interesting to see how quickly it came back to her. It requires a lot of coordination and balance and a lot of those bigger movements we like to incorporate with our neurological patients.

You moved back to Hawaii earlier this year and began practicing at an outpatient orthopedic clinic. When you’re not working, what else besides dance do you enjoy doing?

I really enjoy yoga, running and keeping active. And now that I’m back on Hawaii, I am excited to get back to the ocean sports that I was doing before, like surfing and swimming. Hawaii really lends itself to being outdoors and enjoying the ocean.
“Whenever someone new comes in, I become a private investigator. That’s what’s so fun about our field: No two people are in the same boat.”

—Drew Morcos DPT ’07 tells Trojan Family Magazine in a recent profile about his work with professional athletes.

“All joints have a built-in range that they can go through, and they like to visit those ranges often.”

—Adjunct Associate Professor of Clinical Physical Therapy Eric Robertson explains to Prevention magazine that it’s inactivity rather than bad posture that often causes aches and pains.

WATCH

Shaking Up DPT Education

“The USC DPT program is widely recognized as one of the top programs in the country, even the world. But that doesn’t mean we should ... be complacent about what we do,” Associate Dean James Gordon says in this short video introduction to USC’s new hybrid program. “We want to be the DPT educational model of the 21st century. DPT@USC Hybrid DPT Program Director Julie Tilson DPT ’98, MS ’09, Associate Chair Cheryl Resnik DPT ’97 and Professor of Clinical Physical Therapy Rob Landel MPT ’84, DPT ’96 also weigh in, describing the thought, effort and innovation that went into creating this transformative program.

LISTEN

Tilson talks about the new hybrid program with the Healthcare Education Transformation Podcast.

Q&A

FRIENDS IN HIGH PLACES

Shireen Mansoori blazed a trail earlier this year as the NFL’s first female director of rehabilitation. The USC alumna — she completed her orthopedics residency in 2014 — is now the front line of defense for any Philadelphia Eagle temporarily grounded by an injury.

How did your education at USC prepare you for your NFL career?

USC provides one of the strongest academic-based orthopedic residencies in the country. The curriculum, faculty mentors and other residents helped me build a thorough understanding in orthopedics that I now take with me into the training room.

What does it mean to you to have broken the “glass ceiling” as the first female director of rehabilitation?

I feel incredibly honored and have promised to perform this role to the best of my capability — not only for myself and the Philadelphia Eagles, but for other women who may be watching. My goal is for women to get to a place in professional sports where we no longer have to call ourselves the “firsts.”

What’s the best advice you could give to a DPT student or recent alumnus who dreams of having a job like you?

Never let anyone say you can’t do something. Soak in as much knowledge as you possibly can now, and then focus on specializing later. You have picked one of the most rewarding professions in the world!

“IT’s giving someone the skill set to help manage symptoms early on, with the hope of improving their function over time.”

—Kenneth Kim DPT ’11 helps explain the difference between occupational therapy and physical therapy in a Trojan Family Magazine article about how both interact with primary care medicine.
Valerie Teglia
Assistant Professor
of Clinical Physical Therapy

BY YASMIN PEZESHKPOUR MCM ’16

Valerie Teglia joined the division in January 2018 as co-director of clinical education and assistant professor of clinical physical therapy. Previously, she was at Mount Saint Mary’s University for more than 12 years, serving most recently as director of clinical education. Here are five more things to know about Teglia:

1. HER FATHER HELPED HER CHOOSE A PHYSICAL THERAPY CAREER AFTER READING A MAGAZINE ARTICLE.

“As an undergrad, I debated between the physical sciences and biological sciences, but later I decided the idea of working with people was much more appealing.” While she was home on summer break, her father showed her an article that said physical therapists have high job satisfaction and a wide variety of types of patients to work with.

2. TEGLIA ORIGINALLY WANTED TO PURSUE AN ORTHOPEDIC SPECIALTY — UNTIL SHE BEGAN WORKING WITH PATIENTS WITH SPINAL CORD INJURY.

“I enjoyed the amount of time and creativity required to work with this patient population and was able to see visible improvements in their lives, despite significant change. It taught me a lot about the psychosocial aspects of physical therapy, which is an area that I teach now.”

3. SHE WAS ELECTED CPTA VICE PRESIDENT IN DECEMBER 2017.

Now, nearly halfway through her two-year term as vice president, she is the speaker of the Assembly of Representatives, which is the CPTA’s governing body. She also serves as chairperson of the education committee, which plans the annual conference and continuing education offerings.

4. IF SHE HAD ONE PIECE OF ADVICE TO GIVE TO PHYSICAL THERAPY STUDENTS, IT WOULD BE TO GET INVOLVED IN PROFESSIONAL ORGANIZATIONS NOW.

“There are numerous opportunities for students at the local, state and national levels, and they’re a great way to network,” she says. “There’s no better way to find future employers.”

5. SHE SPENT SUMMERS DURING HER COLLEGE YEARS WORKING FOR THE NATIONAL CHEERLEADERS ASSOCIATION AS AN INSTRUCTOR.

“I strongly believe it contributed to my skill in observing and teaching movement as a physical therapist.”
A Father’s Love

USC’s interdisciplinary ALS clinic helps Shaun Kalpakoff prolong the onset of ALS’ devastating symptoms, giving the single father precious time to play with his 10-year-old son.

BY STEPHANIE CORRAL

WATCH “A Father’s Love”

Single father Shaun Kalpakoff looks to USC’s interdisciplinary ALS Clinic to keep him healthy and mobile enough to keep up with his 10-year-old son.
It seems like every week Shaun Kalpakoff discovers there’s something new he can no longer do without assistance.

The 37-year-old single father is one of an estimated 20,000 Americans who live with amyotrophic lateral sclerosis (ALS), a progressive neurodegenerative disease that kills motor neurons. Also known as Lou Gehrig’s disease, ALS causes a person’s muscles to weaken and atrophy, ultimately leading to paralysis. As the disease advances, a person loses the ability to walk, speak, swallow and eventually breathe.

A SHOCKING DIAGNOSIS

For Kalpakoff, it all started two years ago when he broke his right heel bone in a running-related accident.

“I crushed that thing like an egg into 15 pieces,” says Kalpakoff, who lives in Yorba Linda, Calif.

After a three-month recovery period, Kalpakoff noticed something strange: his left foot, which hadn’t been injured, had grown significantly weaker and was experiencing foot drop (difficulty lifting the front part of the foot due to weakness).

When eight months of testing with several doctors led to inconclusive results, he was referred to the Keck Hospital of USC, where he was diagnosed with ALS in September 2017. The diagnosis was shocking for Kalpakoff, who had always led an active lifestyle.

“It kind of floored me for at least a month or two,” Kalpakoff says. “I didn’t share this information with anyone besides my family and my close friends at first.”

Life expectancy varies from person to person, but according to the ALS Association, half of people diagnosed with ALS live at least three years or more after being diagnosed; 20 percent live up to five years or more.

ROUND-ROBIN OF TREATMENT

However, research has shown that participating in a multidisciplinary ALS clinic can prolong survival and improve quality of life.

USC’s ALS Clinic uses an interdisciplinary and collaborative model to address an individual’s needs following an ALS diagnosis through a cohesive and individualized plan.

Equipped with state-of-the-art equipment, the clinic can run diagnostic tests such as electromyograms and nerve conduction studies to provide an accurate diagnosis and guide treatment.

The clinic houses a wide variety of disciplines, including occupational therapy, physical therapy, social work, neurology, nutrition, speech therapy, pulmonology as well as a community partner from the ALS Association.

Kalpakoff had heard about the clinic shortly after his diagnosis. He says it is convenient because instead of having to schedule separate appointments with doctors, he can get a comprehensive check-up every three months.

“It’s like a Round-robin thing,” Kalpakoff says. “You get a 30-minute visit with all these doctors. It’s exhausting for the patients, but it’s good to get it all out of the way.”

STAYING INDEPENDENT LONGER

One of the doctors he regularly sees is Nora Darakjian DPT ’14, an instructor of clinical physical therapy.

“Physical therapy improves the quality of life for individuals with ALS,” Darakjian explains. “It allows them to stay independent for as long as possible.”

Darakjian says the clinic is especially equipped to handle ALS cases because it has therapists with board certification in neurological physical therapy.

“This allows therapists to provide more specialized, evidence-based care to individuals with ALS,” she says.

Kalpakoff credits Darakjian with helping him stay mobile as long as possible by recommending equipment such as ankle foot orthoses and canes and teaching him energy-conservation techniques and postural management tips.

“I don’t like listening to many people,” Kalpakoff says. “But I trust her, so we have a good relationship.”

Darakjian considers Kalpakoff an inspiration.

“He has a positive outlook and very clear goals for his care,” she says. “He is very aware of his functional needs, and we partner in problem-solving his mobility needs.”

Although Kalpakoff must now use a wheelchair, Darakjian keeps him moving.

“We’re doing mostly range of motion and different kinds of stretching that I need to do at home to keep myself kind of limber,” says Kalpakoff, who manages a family-owned waste management company. “She gives me a lot of ideas and things to do at home when I’m not with her. I have a lot of back and neck problems now just because my body is weak.”

Darakjian is currently focusing on optimizing Kalpakoff’s respiratory function and posture to help manage his neck and back pain.

“We want him sitting and standing up tall in all his photographs with friends and family,” she says.

SPENDING TIME WITH LOVED ONES

For Kalpakoff, spending quality time with the people he cares about has become his top priority, especially his 10-year-old son, Ashton.

Like his father, Ashton also enjoys sports and currently holds a blue belt in karate. While he is aware that his father is ill, he doesn’t know all the details.

“I just tell him, ‘Daddy’s muscles are weak and are getting weaker,’” Kalpakoff explains. “That’s the only thing I tell him. It’s a hard topic to tell your son.”

Despite his physical limitations, Kalpakoff and his son still find ways to have fun, like riding an electric-powered three-wheel bike together.

“Anything that sounds fun, we go do it,” Kalpakoff says. “Everywhere that we go, we kind of have an adventure.”

Being diagnosed with ALS has changed Kalpakoff’s life outlook, which has been liberating, he says.

“You start thinking more about creating memories and creating a lasting impact,” he says. “It’s made me a lot better of a person, I think. I’ve become more open, not really scared to express my feelings. There’s a lot more to life than everything that you’re trained to believe is important.”

On Sept. 7, 2018 — exactly a year after his diagnosis — Kalpakoff made his condition public on Facebook. Among his reasons for doing so, he wrote, was Ashton.

“When I watch my son Ashton make good choices and be kind to others, I get this feeling that cannot be explained,” he wrote. “He is my driving factor that keeps me focused, positive and willing to do whatever it takes. I sincerely hope each and every person who reads this message has someone — not something — that fulfills that feeling. If you don’t, I challenge you to go out and find that person.”

Kalpakoff’s friends created a website for those who wish to donate toward Shaun and Ashton’s future adventures.

Follow Shaun and Ashton on their adventures:

facebook.com/shaunandashton
instagram.com/shaunandashton
With the advent of the new DPT@USC hybrid program, which began this summer, there are now two educational paths that ultimately converge into a USC doctor of physical therapy degree. In this issue, we asked first-year residential DPT student Cheri Chan DPT ’21 and first-year hybrid student Maya Acocella DPT ’21 to chronicle two days in their lives as USC DPT students to show how similar (and, in some cases, how different) the two educational paths are.

**CHERI CHAN DPT ’21**
Residential DPT student

**DAY 1**

6:55 a.m. Wake up and open Headspace. I start my day with a five-minute meditation.

7:52 a.m. I greet my classmates and chat about the weekend before opening Notability and reviewing my notes for my pathophysiology quiz.

8 a.m. *Pathophysiology 509*: I listen to Dr. Dieli-Conwright lecture about the asynchronous material as well as the questions we answered on our own. Since class is split in half, there is a class discussion regarding this material with about 47 other students. A majority of class time is spent working in small groups on the week’s patient case, where we answer questions regarding their pathophysiology and ways physical therapy can be used as an intervention for that disease.

9:25 a.m. With two hours to go before anatomy, I head to the patio to get some studying done. I pull out my iPad and start to review last week’s anatomy lecture material.

11 a.m. I meet with my evidence-based practice group to film our coaching sessions, where we take on the roles of coach, patient and videographer. Each session consists of the coach asking the patient how the week’s mindfulness practice went, what obstacles were present and how can things be improved for the upcoming week.

11:30 a.m. *Musculoskeletal Anatomy 514*: I listen to Dr. Salem give a lecture on the joint of the day. His favorite thing to do is draw, so we draw a few figures each class. I draw the blood supply, the nerve plexus, the ligaments and transverse cross sections of muscles.

2 p.m. Lunch: It’s always a race to the microwaves since there’s only about nine for 95-plus students. I like to keep my meal prep simple during the week, which is usually rice, chicken and veggies.

2:45 p.m. I head to the locker room and get ready for cadaver lab, suit up in scrubs, shoes, gloves, eye glasses and a disposable gown.

3:10 p.m. *Musculoskeletal Anatomy Lab 514L*: There are 25 cadavers with four people at each. Lab is run simultaneously with lecture, so today’s focus is on the area we just covered in lecture. For the most part, I’ve gotten over the fear of skinning and work with my lab mates to complete the day’s dissection. The fun part is seeing all the muscles — where they originate and insert — and what nerves and arteries run to innervate and supply those muscles. The human body is completely fascinating, and this class makes learning easier, more effective and fun.

4:50 p.m. I start to clean up the tools and close the cadaver for the day. I head to the gym to get my Olympic lifting training or accessory work in for that

**Continued on page 19 »**
During Movement Analysis 582, the residential DPT students film and analyze each other’s gaits.

Residential DPT student Cheri Chan DPT ’21 suits up for Musculoskeletal Anatomy Lab 514L, which takes place in the division’s cadaver lab.
day. I look forward to this time of the day because it is my mental break from a long school day.

7:15 p.m. I eat dinner while planning what to study that night. I make sure I don’t forget to give myself mini breaks throughout the night so that I don’t burn myself out.

10:15 p.m. I lay in bed and spend up to three minutes working on breathing to transition me to sleep. I end my day with a five- to 10-minute meditation.

**DAY 2**

6:20 a.m. I wake up and open Headspace to do a five-minute meditation to help put my mind to ease before I start my day.

7:29 a.m. Small talk with friends and classmates, while opening up the lecture of the day on Notability.

7:30 a.m. **Patient Management** S2I: I listen and try to absorb Dr. Andersen’s lecture about the joint of the day — and why it’s important. As he explains how to gather all the subjective and objective information, range of motion tests, what special tests to do, I figure out how to organize my studying this upcoming weekend.

9:04 a.m. Transition to patient management lab. I listen to faculty members demonstrate different techniques of the skills we are about to learn for the day before we break up into small groups. I think, “OK, I need to practice these skills on top of all the other skills weekly to make sure I understand what and why I am doing this.”

12 p.m. The best part of the day is finally here: an hour to relax and chat with friends, but more importantly, it’s time to eat. After eating, I open Notability and study for my upcoming gait quiz. I look around and see many classmates acting out the gait cycle and realize how silly we must look to someone who doesn’t know what we are doing.

2:15 p.m. **Movement Analysis** S82: I listen to Dr. Powers give a lecture on the objectives and critical events during the gait cycle. After each section, he asks if we understand what is going on.

3:15 p.m. We transition to lab where we film each other walking and use the Hudl Technique to analyze each other’s gait. I then compare my analysis with my classmates before we discuss it as a whole class.

4:45 p.m. Class is over for the day, and it is time to go to the gym. I limit myself to 60 minutes because I know that I need to get some studying done.

6:30 p.m. I heat up some pesto chicken pasta while I prepare the night’s study agenda.

10:30 p.m. I open up Headspace and end my day with a five- to 10-minute meditation.

**MAYA ACOCELLA DPT ’21**
Hybrid DPT student

**DAY 1**

7:45 a.m. Wake up and do some meditational breathing. I recently started biofeedback therapy, and some of the techniques I learned really help me center myself before my day starts.

8:15 a.m. Drive to my physical therapy appointment. My chronic back pain started flaring up, so I started to receive treatment.

9 a.m. Arrive at my appointment and discuss what was affecting me that week, in addition to talking about and practicing techniques I have learned in **Basics of Patient Management** S2I. We had recently learned in the asynchronous material about the lumbar spine, which was right up the alley of what I was being treated for.

11 a.m. I stop for Starbucks on the way home. I didn’t really drink much coffee before I started grad school, but it definitely helps me prepare for my upcoming activities for the day.

11:40 a.m. I arrive at home and walk my dog, feed my cats and begin to prepare myself lunch.

12:10 p.m. I begin doing my asynchronous content for **Musculoskeletal Anatomy** S4L. On the LMS (learning management system), the Unit 13 material is listed to take 2:41:10, so slightly less than three hours. This is the final unit of the semester, which focuses on the pelvis, head and neck. This material is fairly new to me because I never learned about pelvic-floor muscles or deep-neck muscles before. The first few sections of the material are on the pelvic floor, so I watch some recorded lectures, then intermittently answer some questions based on the material I just watched.

2 p.m. Review some of the material I had prepared for the **Basics of Patient Management** S2I class that I have at 3 p.m.

3 p.m. In today’s **Basics of Patient Management** S2I class, we are discussing lumbar spine examination and evaluation. In this unit, we learned the subjective and objective aspects of lumbar spine pathology, as well as the six different ICF (International Classification of Functioning, Disability and Health) categories for low-back pain. We start class by...
RESIDENTIAL VS. HYBRID

In what ways are the residential DPT and hybrid DPT programs alike, and in what ways do they differ? Here’s a breakdown:

SIMILARITIES

- Same admissions requirements
- Same courses; same credits required to graduate
- Same full-time commitment
- Same tuition
- Same program duration (3 years)
- Same clinical education program
- Same systems-based curriculum
- Same core USC faculty
- Ends with a USC doctor of physical therapy degree

DIFFERENCES

- Graduating class size
  The first hybrid DPT class was 48 students vs. 98-100 in a typical residential DPT class.

- Residency requirements
  Hybrid DPT students can live anywhere, required to visit the USC campus during immersions only, whereas residential DPT students must live near the USC campus.

- Schedules
  Hybrid DPT students can learn at their own pace with asynchronous material whereas residential DPT students have a set class schedule.

answering some poll questions about our new material, and then proceed in class with talking about the answers to the poll questions. We then proceed by discussing a patient case for the rest of class.

6:30 p.m. I grab dinner that my father has prepared, and I call my boyfriend who works in Virginia. We watch a few Netflix shows over the phone and on the computer together. It’s a nice way for me to unwind from all the work I’ve done today.

8:30 p.m. I finish the rest of my Musculoskeletal Anatomy S14L material. It takes me about four hours to work through the whole unit, from pausing the videos to take notes to answering the questions in between lectures.

11 p.m. I finally get to bed and do my biofeedback techniques to help quiet my mind, so I can easily go to sleep.

DAY 2

6:30 a.m. I wake up to my alarm for the third day of immersion on the USC campus.

7 a.m. My classmates and I begin to walk to campus from our Airbnb. We rented one around the corner from campus, so it was about a 10-15 minute walk every day to campus.

7:15 a.m. I grab breakfast from the food plan that was prepared for us by our president, a department rep. I had a bagel, some fruit and some coffee.

8 a.m. Basics of Patient Management S21L: We begin our final section of Patient Management for the week. The first half of the class is focused on cervical spine assessments and skills. We each pick a partner and continue to switch throughout the first section

10 a.m. We take a short five-minute break between material, so we can get a drink and catch our breath

10:05 a.m. We continue our practice, but this time with lumbar spine assessments and techniques. For me, this section had some of the more difficult techniques that I had to learn, but I got a lot of feedback from multiple faculty, so I definitely learned a lot and sharpened my skills.

12 p.m. We finish our last organized Patient Management class, and it was kind of bittersweet. We knew that we’d have chances to go to office hours and ask for help, but this was our last structured class. We took a class photo with a bunch of our professors to commemorate the moment

1 p.m. Office hours for both Anatomy and Patient Management start, and I make the decision as to which one I want to attend. I decide on Patient Management since there were a bunch of skills I needed help with working on.

3 p.m. Musculoskeletal Anatomy S14L: I get changed into my scrubs for anatomy. We meet in a classroom first to discuss what we are about to review in the anatomy lab. For the lab, each group was assigned two bodies, with four people per group. These groups were created the previous immersion, but we maintained them though this immersion. For this lab, we went over posterior antebrachium (back of the forearm) muscles, nerves and blood supply.

5 p.m. We change out of our scrubs and are welcome to attend an extra half-hour of anatomy review, conducted by Dr. Michael Rowley. Nearly everyone from the class attends, as the material we have covered is very difficult.

5:30 p.m. Two of the classmates that I stay with in the Airbnb and I walk back to the house to study, because we felt more productive working from the house.

7 p.m. My classmates and I eat dinner, which we ordered while we were practicing our skills. We go through a large list of every skill we had learned since the previous immersion that we could potentially see appearing on our practical exam.

11:30 p.m. I climb into bed and discuss with one of my classmates what the plan is for the next day. Once we finish, I go through my biofeedback techniques to fall asleep.
Hybrid student Sean Bennett DPT ‘21 performs a Thomas Test on Ranita Ram DPT ‘21 as part of the Basics of Patient Management class.

In Basics of Patient Management, hybrid DPT students learn to take wound measurements using watermelons.

PHOTOS BY EMILY KINSLVING/2UINC
Ready Player One

USC physical therapy researcher teams up with computer scientist to develop voice-assisted device that provides gamified speech therapy for children with cerebral palsy.

BY MICHELLE MCCARTHY
Imagine out-singing the Phantom of the Opera and then freeing your friends by distracting a pack of trolls.

No, this isn’t the plot of a new fantasy video game; rather it’s an innovative method to deliver speech therapy.

The game, called Amplify, uses the voice-assisted technology of Google’s AIY Voice Kit to provide gamified speech therapy to children with cerebral palsy.

Amplify recently brought home first place (and $10,000 in prize money) from USC’s “Voice Assistants for All Hackathon.”

The team behind it is composed of Assistant Professor of Research Christopher Laine and Brian Cohn MS ’18, a National Science Foundation Graduate Fellow and student in the Computer Science Ph.D. program at the USC Viterbi School of Engineering.

The competition — hosted by the USC Center for Body Computing and the Working for Inclusive and Transformative Healthcare Foundation — challenged participants to use a home-based, voice-controlled personal assistant, driven by artificial intelligence, to develop a health advocate for underserved patient populations, such as veterans, seniors or those with developmental disabilities.

HOW DOES CEREBRAL PALSY AFFECT SPEECH?

Cerebral palsy, a congenital movement disorder that can result in a variety of movement and cognitive symptoms, stems from brain damage near the time of birth, often due to a stroke. One of the challenges patients face is the ability to communicate effectively, which is especially detrimental at an early age. “We believe no child should have his or her sense of expression suppressed,” Cohn says.

Team Amplify chose to assist those with cerebral palsy for two reasons: First, Laine’s area of expertise is oral-motor control, and secondly those with the disorder often receive inadequate therapy. “There’s a critical window where speech therapy is very important, early on when they’re children,” Laine says. “And it might become less effective with age.”

CHOOSE YOUR OWN ADVENTURE

Laine and Cohn sought to turn standard speech therapy on its head, making it more entertaining for children by creating a voice-assisted, choose-your-own-adventure game. “To move the story forward and interact with the characters, the child responds using voice therapy exercises,” Laine explains. The responses are recorded and evaluated on the spot. Depending on the response and therapy needs, the story continues in one direction or the other.

“For one exercise, patients have to make an extended ‘ah’ sound, so we had them get into a singing contest with the Phantom of the Opera,” Laine explains. “If the response was long enough, and they’re able to gain the respect of the Phantom, he’ll help them in the next steps of the adventure. There’s another part where we wanted to do a modulation of voice tone, so patients have to distract a troll by making a questioning ‘Uhhhhh?’ sound to set their friends free.”

HIGH-TECH HEALTH CARE

Features such as how many exercises a patient has to complete before moving on to the next level can be fine-tuned on a case-by-case basis. Amplify would ideally be a device a child with cerebral palsy could take home to continue therapy. It would not eliminate the role of a speech therapist but would supplement traditional therapy. Following a session, a child’s “homework” can be recorded, analyzed and delivered to a speech therapist, providing additional information and helping to guide therapeutic strategies. Data can be retrieved via USB or uploaded immediately to the cloud.

“The therapist could even potentially interact with the device from his or her office and send updates,” Laine says. “The options are endless as far as being able to make it adaptive.” And since Amplify would enable patients to continue their exercises without having to go to multiple appointments, it could decrease costs.

“For some parents, a trip to the therapist with their child involves worrying about whether they can afford the gas, parking and time away from work,” Cohn says. “With a take-home device that offers a variety of enthralling speech therapy adventures, children can practice/play whenever and wherever they choose, opening up more time and saving more money for their family. And our prototype thus far can operate in homes without an Internet connection.” Additionally, Laine says there is a precedent for devices like Amplify to be covered by health insurance.

BUT WILL THEY LIKE IT?

While Amplify is still at a conceptual level and has not yet been tested on patients with cerebral palsy, Juan Espinoza MD ’10 at Children’s Hospital Los Angeles (CHLA) is helping to get the device into the hands of patients with cerebral palsy.

“We’re working on a prototype that will be deployed with a speech therapist at CHLA,” Laine says. “It would be a very limited trial to make sure the children interact with the device and enjoy it. If we have the content where we want it, the idea would be to have a set of patients take the device home.”

Laine and Cohn have started the process of obtaining intellectual property rights for Amplify and have plans to incorporate and hopefully attract investors. The $10,000 in prize money will go toward creating a start-up company and product development for the prototype.

FIRST OF ITS KIND

Currently, there aren’t any other voice-assistant devices on the market for speech therapy. Amplify will be the first. And once it is available, Laine can see it being applied to patient groups undergoing speech therapy for any reason.

“Gamified therapy is a trend that is gaining momentum,” Laine says. “I think voice assistants are going to be a logical next step for many applications.”

The idea of improving the quality of life for children with cerebral palsy and essentially giving them a voice is something that makes Laine and Cohn excited for the future.

“For anybody in a research field, the ultimate goal is to positively affect somebody’s life,” Laine says. “Sometimes these ideas are complicated, and sometimes they are simple. Amplify is a fairly simple concept, which can be implemented in many different ways. I hope that by virtue of its simplicity and flexibility, it becomes a reality fast.”
CHAMPIONING PHYSICAL THERAPY

USC physical therapy students learn the importance of advocating on behalf of the profession to federal and state lawmakers.

BY JAMIE WETHERBE MA '04

ILLUSTRATION BY NATALIE NELSON/I/2IART INC
Last summer, Ashley Wallace DPT ’19 took a deep breath as she stepped into Assemblymember Patrick O’Donnell’s office.

“I was incredibly nervous,” she recalls. “I had been preparing to make sure I knew each detail of any issue or bill we might talk about.”

As part of USC’s doctor of physical therapy program, Wallace and a classmate had made an appointment with O’Donnell’s district director to discuss state and national issues that could impact physical therapists and patients, including the opioid epidemic.

In doing so, Wallace joined physical therapists across the country who are advocating that physical therapy become a first-line of defense in pain management.

“We shared personal stories about how we’ve been affected by this huge, national problem,” Wallace says. “That was a learning moment. Ultimately, the experience of advocacy is about connecting with a representative over our shared passions of serving and helping the public. It was really amazing.”

Action over complaints

Student involvement in advocacy at state and federal levels has long been rooted into USC’s DPT curriculum, with students participating in everything from writing letters to face-to-face meetings with representatives on Capitol Hill.

“There are many opportunities for our students to advocate on behalf of the profession and patients with those who can initiate action,” says Cheryl Resnik DPT ’97, associate chair and associate professor of clinical physical therapy — and one of the key champions of USC’s advocacy efforts. “This is really about advocating to change law on behalf of the public.”

USC students have participated in several successful advocacy campaigns, including working to keep physical therapy designated as an essential health benefit within the Affordable Care Act and improving physical therapy access for California children with disabilities.

“Frequently, we complain about what’s wrong with the health care system, but we don’t teach people that they can change it,” says Yogi Matharu ’95, DPT ’98, assistant professor of clinical physical therapy, who teaches advocacy as part of his health care systems course. “If a patient needs something different, we need to contact the people who can make those decisions through our legislative process.”

Advocacy takes root

Thanks to these advocacy efforts, USC has earned several accolades, including the APTA Student Advocacy Challenge. The contest was created in 2010 to inspire physical therapy students to advocate at the state and federal levels, and USC has won the challenge five out of the past six years.

“Students earn points for certain advocacy activities,” explains Resnik, who recently received the Steve Watson Award in recognition for her commitment to the California Physical Therapy Political Action Committee. “You can write letters or make phone calls, but the most points come from visiting legislators.”

Resnik first incorporated student advocacy into one of her classes when the CPTA was running a bill that would give patients direct access to physical therapy without a referral.

“Patients could get an evaluation from a physical therapist, but we couldn’t start treatment until someone, like a physician, provided a diagnosis,” Resnik says. “The [proposed] legislation would allow patients the ability to go directly to a physical therapist, get evaluated and have their insurance pay without having to go through any gatekeepers.”

Resnik sent her students out to educate their legislators about the bill, prepared with several talking points. “Everyone thought it was so valuable to see how the process of advocating for their profession worked,” she says. “The students decided I should keep it as a regular part of the class.”

Successfully effecting change

Scott McAfee DPT ’16 became heavily involved in advocacy efforts, thanks to Resnik. “She really showed me the importance of having your voice heard and why advocacy matters,” he says.

During his time at USC, McAfee served on the APTA Student Assembly Board of Directors and attended meetings with assemblymembers and district representatives.

“At the end of the day, we’re working so that our profession can change people’s lives,” he says. “We want to make sure patients have access to physical therapy, and this access isn’t limited.”

In 2015, McAfee and several other USC students traveled to Washington, D.C., to meet with national representatives in the House and Senate, advocating to repeal the Medicare cap on physical therapy.

“Patients on Medicare had an arbitrary dollar cap on treatments,” Resnik explains. “So whether you were being treated for an ankle sprain or a stroke, there were only a certain number of visits Medicare would pay.”

After years of consistent advocacy, the cap was recently repealed.

“It was exciting to be a part of that from the beginning,” McAfee says.

USC’s future advocacy efforts include adding physical therapists to the list of professions eligible for loan repayment if they work in underserved areas, as well as legislation that will give patients faster, unrestricted access to physical therapy.

In addition to improving patient care, students learn skills though advocacy they can apply to other areas. “It’s not just about talking to legislators,” Matharu says. “Students will have to learn to advocate on behalf of their patients with insurance companies, physicians and other providers.”

Wallace agrees that developing this experience is essential.

“It’s important for patients and for myself — like when I’m getting a job or negotiating a salary,” she says. “It showed me some of my strengths and areas I’d like to work on.”

When asked if Wallace plans to continue advocacy activities after graduation, she responds quickly and with conviction.

“Definitely, without a doubt,” she says. “It’s important to speak up and speak passionately so we can improve the quality of health care and encourage our community leaders to do the same.”
Kenny Kim DPT '11 demonstrates how to place dental restorations while maintaining proper form by using a mirror for indirect vision.

PHOTO BY HANNAH BENET
Minalie Jain DDS ’21 had experienced pain before, but when she started to work in the dental school’s simulation (“sim”) lab, the shooting pain in her arm caught her attention.

The sim lab involves a lot of fine handwork, with students bent over molds of teeth. The intensity of the muscle contractions left Jain in stabbing and throbbing pain.

Fortunately for her, the dental school and physical therapy program have teamed up for a unique collaboration to use physical therapy skills to help dental students deal with the physical stress caused by dentistry. Jain now does physical therapy to help her in her work.

**HUNCHED OVER FOR HOURS**

Dental students had always had one lecture on ergonomics from a physical therapy professor, but when Kenneth Kim DPT ’11, instructor of clinical physical therapy, took over that lecture, he thought the schools could do more together. “I felt like a lecture once a year wasn’t enough — especially because we were seeing so many dental students at the clinic,” he explained, referring to USC Physical Therapy, the division’s faculty-run practice. “Sometimes the students were getting pretty emotional because of all the pain.”

Kim worked with Jin-Ho Phark, associate professor of clinical dentistry, to set up the ergonomics and body mechanics collaboration after the lecture. This is the first year that physical therapy students go to the dental students’ sim lab once a week, for two hours in the morning and two hours in the afternoon. “We can follow up on body position and patient position, and they have been really receptive,” Kim says.

The biggest issues that dental students face are forces on their hands, necks and arms as they work on models of patients. “They sometimes forget to adjust the patient to make their own bodies work more easily,” Kim says. “That means that students can stay hunched over, in that position for four hours, which causes neck and back pain. We come in and make a small adjustment, which results in a huge outcome.”

**A WIDESPREAD PROBLEM**

Dentists are particularly prone to musculoskeletal disorders: 70 percent of dentists suffer from them, compared to 12 percent of surgeons. That’s mainly because dentistry requires lots of repetitive motions, especially by the hand and wrist, as well as sustained postures, Phark says.

Phark explains that students in the sim lab work on mannequins, learning to use drills inside tooth models. The way they position their necks forward or slouch their backs can often result in lower back and shoulder pain. “We see that throughout the years students in dental school don’t always take care of their posture while they perform procedures,” he says. That’s hard on a body, especially considering students are working in the same position for eight hours a day.

In addition to the lectures and hands-on help, students can often position themselves by using visual aids called loupes, allowing them to maintain a certain distance from a patient. “With lenses on the loupes, you can’t really adjust them so there is a working length so they have to position themselves,” Phark says.

*Continued on page 28*
“Dr. Kenny Kim showed me the importance of practicing great ergonomics and building solid habits early on,” says Nicholas Tan DDS ’22 who explained how hours of poor posture in the sim lab began to take its toll on his body.

MIXING IT UP

Kenneth Gozali DH ’18, DDS ’22 uses his loupes to remind himself to keep a good posture and position with patients. He focuses on sitting straight and having the right chair and patient height — all of which make it easier to do his work. “It was a little strange because I was not all that used to sitting all day, but now I like to switch it up: I’ll sit down for two or three patients and then stand up for the next ones,” he says, adding that in dentistry it’s all about keeping your hands and arms in good working order. “You can’t do much with a bad back or bad arm.”

Phark has used the collaboration as a refresher in his own work: He noticed there were days when he came home in pain. “My back is hurting, my neck is hurting, I have to maintain a proper posture myself,” he says. “It’s not just preaching; we have to practice ourselves.” He works on Wednesdays in the USC Dental Faculty Practice for 12 hours. “I basically cannot survive the day if I’m not sitting properly.”

A TWO-WAY EDUCATION

The dental students have been very receptive to the instruction and advice, since many of them experience a variety of issues that we can help them navigate and problem solve, whether its pain, fatigue, or difficulty visualizing target areas within the mouth, Ashley Wallace DPT ’19 says. She has also learned things from the dental students. “I’ve learned the dentistry-specific language in regards to quadrants and tooth surfaces, and how the position of both the patient and dentist change depending on the target surface, procedure and tools required, or whether direct or indirect vision is used.”

Wallace says it’s been valuable to adapt her training to a specific audience like the dental students. “My hope is that if they implement proper body mechanics now, they will have less need for physical therapy down the road.”

THREE WEEKS TO BREAK A HABIT

Kim hopes to continue and expand the collaboration in the coming years. This year, the DPT students are only working in the dental school for five weeks — and they are trying to figure out how to do more in the future. “For the first year, five weeks is pretty good,” he says. “It takes three weeks to break a bad habit, like slouching or stooping. With our presence, we can get them to be more mindful about their posture going forward.”

Jain will continue to do physical therapy exercises, which she says are helping her pain. An X-ray showed calcified tendonitis in her rotator cuff, a genetic condition that was exacerbated by her dental school work. She’s grateful for the extra perspective and help she gained from the collaboration. “Ergonomics is very crucial in dental school because forming a bad habit is really easy since it is very difficult seeing in the mouth,” she says. “It is important to keep the back straight and the arms in appropriate positioning so it doesn’t cause strain on it, even for people who do not have arm issues.”
“Often we would see students crane their necks to visualize target surfaces better instead of either adjusting their mirrors or shifting their body positions,” says Ashley Wallace DPT ’19, who demonstrates here what not to do.
1961
Daphne (Whitelaw) Stoermer ’61 is “still practicing after all these years!” She is an independent Bemer distributor and can be reached at dstoermer@sbcglobal.net.

1962
Rochelle Brucker ’62 lives in an active adult 55-plus community in the Bay Area, where she develops health education programs for community residents. Using her combined background as a registered nurse and physical therapist, Brucker teaches rehabilitation and function maintenance concepts to nursing staffs. During her career, she developed programs at L.A. County Medical Center, worked as a faculty member in the De Anza Community College nursing assistant program, served on the Area Agency on Aging advisory committee and trained as a HICAP Medicare counselor. She attends local senior group meetings where local agencies share information on their services. Brucker has one granddaughter in her junior year at USC and one grandson who graduated in May 2018.

1987
Daryl Lawson MPT ’87 accepted a position at Western Michigan University as an associate professor in the department of physical therapy.

1994
David “Scott” Edwards MPT ’94 is developing a cash-pay sports/golf business within his company to do rehab (but primarily pre-hab) and performance enhancement. I love using the movement analysis and creativity that John Meyer DPT ’98 and Drew Morcos DPT ’07 developed in me during my sports residency,” he says. Edwards is excited to pursue something he is very passionate about.

1996
Rob Landel MPT ’84, DPT ’96 returned to the Kenya Medical Training Center in Nairobi in September to teach as part of the advanced diploma in orthopedic physiotherapy program sponsored by the Jackson Clinics Foundation. He taught program graduates and assisted the local faculty as they took over the program’s primary teaching role. “The goal for the program has been that it become self-sustaining,” he says. “It was heartening to see it is well on its way to achieving that.” Learn more about the program at teachandtreat.org.

2005
Trisha Sando DPT ’05 earned her PhD in epidemiology from Virginia Commonwealth University in May 2018.

2006
Thaomy Beltran DPT ’06 published her first children’s book, Back On The Court, an encouraging story to read with a child going through a sports injury and rehabilitation. This book is part of the health stories for kids series, which serve as an educational resource for both parents and children. The books contain characters who discover why they are different and learn to overcome their challenges and lead normal lives.
2006
Jeff Moreno DPT ’06 has developed a tech platform called PWRLab.com, an intelligent cloud-based software application for runners meant to decrease their risk of running-related injuries. We do this by aggregating second-by-second data from runners’ GPS watches and applying algorithms to understand an individual’s risk of injury, giving them the ability to intervene, he explains. “Thank you USC Physical Therapy for the framework that has given me and my team the confidence to enter the tech world of Silicon Valley with a fresh and exciting tool. Fight On!”

2011

2014
Katie Wongthipkongka ’11, DPT ’14 married Bronson Chang ’10 on April 21, 2018 in Hawaii.

2015
Krista (Gorciak) Contreras DPT ’15 gave birth to a baby girl, Raegan Lynnette Contreras, on May 1, 2018.

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
I didn’t expect it to be so cold. I mean, I knew that Los Angeles weather had spoiled me, but I can remember waking up on that strikingly chilly January morning in Ensenada, Mexico, and reaching for every layer that I had packed.

The sun wasn’t quite out yet. Still we huddled into our van, filled to the brim with supplies, and drove towards the mountains. The location is kept undisclosed, but we knew we were close when the road was no longer paved, potholes filled with “puddles” that would rival Echo Park Lake. And there it was, on the dead end of a dirt road — an unassuming, unmarked home.

The San Gabriel Orphanage stood in front of us so meekly, but the old cliché stands true, and this place is certainly anything but. We were greeted by smiling faces, tens of them, all beaming with excitement to play and to learn and hug (lots of hugs) their latest visitors.

The San Gabriel Orphanage houses anywhere from 20 to 40 children at a time, most of whom have been surrendered by their families, and all of whom have been diagnosed with some etiology of developmental delay, rendering them with special needs.

Though protected by the Mexican government, the orphanage operates almost wholly on donations and gifts from charities, religious groups and non-profit organizations.

The division’s student-led Physical Therapy Multicultural Leadership Alliance has been spearheading biannual weekend trips to the San Gabriel Orphanage for several years and has been consistently involved with the health and wellness of its tenants throughout.

Having been fortunate enough to participate in and lead these trips, my idea of physical therapy in action radically changed. For me, being able to lend a hand, not only as a volunteer, but as a physical therapy student, helped remind me of just how much we can give back through our practice — whether it be providing stretching for children who had contractures, adjusting wheelchair postures or even incorporating purposeful coordination into seemingly simple play. The visits to the San Gabriel Orphanage called upon a unique set of knowledge and skills that render physical therapists able to profoundly affect the global community by delivering movement, function and relative independence.

I think, for the first time in my trajectory as a physical therapist, I saw practice in action, summed up eloquently in the smiles of the children of the San Gabriel Orphanage. For just eight hours, they were given an opportunity to play, move and engage with their environment.

Physical therapy is not bound to tools or clinics. The visit to the orphanage solidified just that — therapy began as soon as we stepped through the door. Even as students, we were able to engage the children in activities and mechanisms that stimulated neuromotor development, applying classroom concepts to engender real world solutions. The power of physical therapy to give back to the community is physical — in its essence, tangible — but the power of physical therapy to promote physical wellness in those who need it most, is untouchable.

As our group packed up to head back to the comforts of our hotel room, I can distinctly remember something one of the San Gabriel Orphanage staff members said to me on my first trip, “You gave the kids a chance to be kids today.” And with that sign off, I knew we had made a difference.

“Being able to lend a hand ... helped remind me of just how much we can give back through our practice.”
CONTINUING PROFESSIONAL EDUCATION

Our mission is to promote professional excellence, clinical specialization and lifelong learning by providing the highest quality clinical and evidence-based educational programs to our clinical instructors and the global community of physical therapists across the full spectrum of career development needs.

Orthopedic Boot Camp 2019
January–November, 2019
Speakers: Daniel Kirages, PT, DPT, and Sean Johnson, PT, DPT
12 CEUs

Orthopedic Boot Camp: Management of the Shoulder
January 5–6, 2019
Speaker: Sean Johnson, PT, DPT, OCS
1.5 CEUs

The Athlete Movement System: Upper Quarter
January 12–13, 2019
Speaker: Jared Vagy, PT, DPT, OCS
1.5 CEUs

Orthopedic Boot Camp: Management of Thoracic Spine
January 19–20, 2019
Speaker: Sean Johnson, PT, DPT, OCS
1.5 CEUs

APTA Clinical Instructor Credentialing Course
February 9–10, 2019
Speaker: Michael Simpson, PT, DPT, CCS, and Valerie Teglia, PT, PhD, FAPTA
1.6 CEUs

Orthopedic Boot Camp: Management of Cervical Spine
February 9–10, 2019
Speaker: Daniel Kirages, PT, DPT, OCS, FAAOMPT
1.5 CEUs

Evaluation and Treatment of a Patient with Knee Pain: Comparison of Two Movement System Approaches
February 23, 2019
Speaker: Christopher Powers, PT, PhD, FACSM, FAPTA & Shirley Sahrmann, PT, PhD, FAPTA
0.7 CEUs

Orthopedic Boot Camp: Management of Pelvic Girdle
March 9–10, 2019
Speaker: Daniel Kirages, PT, DPT, OCS, FAAOMPT
1.5 CEUs

Essentials of Spinal Manipulation with Peter Gibbons, MB, BS, DO, DM-MHSc; and Philip Tehan, DO, Dip, Physiotherapy, MHSc
March 14–16, 2019
Speaker: Dr. Peter Gibbons and Dr. Philip Tehan
1.8 CEUs

Spinal Manipulation Masterclass (1-Day)
March 17, 2019
Speaker: Dr. Peter Gibbons and Dr. Philip Tehan
0.7 CEUs

Orthopedic Boot Camp: Management of the Lumbar Spine
April 13–14, 2019
Speaker: Daniel Kirages, PT, DPT, OCS, FAAOMPT
1.5 CEUs

Orthopedic Boot Camp: Management of the Hip and Knee
June 22–23, 2019
Speaker: Daniel Kirages, PT, DPT, OCS, FAAOMPT
1.5 CEUs

Fascial Manipulation: Level 1
July 12–14 & July 26–28, 2019
Speaker: Antonio Stecco, MD, PhD and Larry Steinbeck, PT, MS
4.8 CEUs

Orthopedic Boot Camp: Management of the Foot and Ankle
August 24–25, 2019
Speaker: Daniel Kirages, PT, DPT, OCS, FAAOMPT
1.5 CEUs

Orthopedic Boot Camp: Management of the Elbow, Wrist, and Hand
November 2019 (TBD)
Speaker: Sean Johnson, PT, DPT, OCS
1.5 CEUs

Online

The Movement System: The Upper Quarter Athlete
Instructor: Jared Vagy, PT, DPT, OCS. 48 CEUs

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 CEUs

Essentials for Appraising Evidence
Instructors: Linda Fetters, PT, PhD, FAPTA and Julie Tilson, PT, DPT, NCS
2.0 CEUs

Stay updated on our course listings:

Or email Barbara Roddy at roddy@pt.usc.edu to be added to the USC Division of Biokinesiology and Physical Therapy Continuing Education mailing list.

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