inMOTION
BIOKINESIOLOGY & PHYSICAL THERAPY

We Transform Lives

USC Division of Biokinesiology and Physical Therapy
TRANSFORMING LIVES BEGINS WITH OUR STUDENTS

Dr. Rob Landel, director, Doctor of Physical Therapy program, with Sierra Gant, DPT '15.
Lisette Ackerberg, Grateful Patient: “I think they gave me extra years”

William Alvarenga, DPT ’12: Empathy for Every Patient

Dr. Christina M. Dieli-Conwright: Designing Clinical Exercise Interventions to Improve Women’s Health

WE TRANSFORM LIVES

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We Transform Lives

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Dr. Christina M. Dieli-Conwright: Designing Clinical Exercise Interventions to Improve Women’s Health

inMotion

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ASSOCIATE DEAN AND CHAIR JAMES GORDON
DIRECTOR OF ALUMNI RELATIONS & COMMUNICATIONS SARA VILLAGRAN PALAFOX
MANAGING EDITOR

2012 Distinguished Alumnus Award: Samuel R. Ward, PhD ’03
Gary Souza, PT, MS ’00, DPT ’00: Creating Pyrotechnic Magic
Staying in Touch
Presenting Your New USC PTAA Executive Committee

Fall 2012
HELP US CONTINUE TO TRANSFORM LIVES

At the beginning of each fall semester, I stand before our incoming DPT class and ask them to form a mental image of themselves at that moment. I tell them that this should not be an image of what they look like, but rather, an image of who they are—what they can do and how they function in the world.

Three years later, as the students get ready to walk onto the Bovard Auditorium stage to receive their diplomas, I ask them to recall those self-images, and to compare them to the persons they have become. The uncertain, awkward, and inexperienced students who came to us three years earlier have been transformed—through hard work, perseverance, and even courage—into confident, skilled, and capable doctors of physical therapy.

This is the alchemy of DPT education at USC. And it is only the beginning. Our mission is to transform lives—through research, education, and clinical practice.

We strive to do research that will find better ways to treat painful and crippling conditions that can strike across the lifespan, from the very youngest to the oldest. We constantly review and strengthen our DPT program to ensure that our graduates combine the highest level of evidence-based practice with a deep commitment to each patient as a unique human being. Every day, we work to advance clinical practice, seeking better ways to help patients improve the quality of their lives.

To accomplish our mission, we need to attract and retain leading faculty, build state-of-the art facilities, and enroll outstanding students—multiple goals that require significant outside funding. One of our most pressing concerns is to reduce the tuition burden on our students by seeking funds for scholarships and other forms of direct support.

This fall, we embark on a campaign to raise more than $5 million over the next six years. To our knowledge, this is the largest fundraising campaign ever undertaken by a program in physical therapy. But that is not the reason we chose this amount. We chose it because it is what we need to continue to transform lives.

James Gordon, EdD, PT, FAPTA
Associate Dean and Chair
The Division by the NUMBERS

1,152
APPLICATIONS TO THE DOCTOR OF PHYSICAL THERAPY (DPT) PROGRAM IN 2012—A 251% INCREASE OVER THE LAST 5 YEARS

Two or Six
Months after a stroke when physical therapy interventions can improve walking ability—a key finding from the LEAPS multi-site clinical trial

1:12
Faculty-Student ratio in the DPT program

6
Number of faculty who are Worthingham Fellows, the profession’s top honor—more than in any other U.S. physical therapy program

280
NUMBER OF STUDENTS ENROLLED IN THE THREE-YEAR DPT PROGRAM

11,000
TOTAL SQUARE FOOTAGE OF DIVISION RESEARCH LABORATORIES

$58.9 MILLION
Total external funding for faculty research, 2007-2012

29 PhD STUDENTS IN THE BIOKINESIOLOGY PROGRAM

Biokinesiology

11,000
PATIENTS TREATED AT USC PT ASSOCIATES CLINICS SINCE 2009

Alumni (1943-2012) with bachelor’s, master’s, DPT, and PhD degrees

2,800+

FALL 2012 IN MOTION
CONVOCATION & WHITE COAT CEREMONY 2012

On August 30, the Division of Biokinesiology and Physical Therapy held its annual Academic Convocation and White Coat Ceremony to welcome 95 new students to the Doctor of Physical Therapy class of 2015. The white coat is presented to each new student as a symbol of the DPT commitment to professionalism, responsibility, and humanism. The Division also celebrated the accomplishments of second- and third-year students with scholarships and marked the completion of residency graduates’ certificate programs.

Dr. Cassandra Sanders-Holly, adjunct instructor of clinical physical therapy, and owner and director of Leaps and Bounds Pediatric Therapy, Inc., delivered the keynote address. “My white coat sets me apart from the 97 percent of the population who are not called ‘doctor,’” she said. “It is authoritative, but not entitled; bold, but not arrogant, pretentious, or pompous. It is not a barrier to protect me from my patients, but a tool to enable me to care for them.”

For more White Coat Ceremony photos, visit tinyurl.com/USCWhiteCoat2012

Members of DPT Classes of 2014 and 2013 receive the Year One (top photo) and Year Two Academic Excellence Scholarship, which recognizes students who have completed their first or second year for outstanding academic achievement in both basic science and clinical courses.
New Residency in
PEDIATRIC PHYSICAL THERAPY

Begins This Fall

The USC Division of Biokinesiology and Physical Therapy has teamed up with Physical Therapy in the Division of Rehabilitative Medicine Children's Hospital of Los Angeles (CHLA), to establish a new Pediatric Physical Therapy Residency Program that will combine the academic resources of the nation's top-ranked physical therapy program with the physical therapy clinical expertise of a leading children's hospital.

“This is an important and timely collaboration between the Division and CHLA,” said Dr. Linda Fetters, professor and holder of the Sykes Family Chair in Pediatric Physical Therapy, Health, and Development at USC. “We will be one of only two pediatric physical therapy residency programs on the West Coast, and we will fill a very important educational need in the physical therapy profession.”

The mission of the one-year program is to train leaders and advanced practitioners with a coordinated, culturally competent, family-centered orientation who will provide and ensure high-quality, evidence-based, cost-effective, community-based integrated services in their communities.

“The merged expertise of the academic and clinical communities at USC provides unique opportunities for our residents to become leaders in community-integrated clinical care and to expand the body of clinical and scholarly knowledge in the profession,” said Dr. Fetters, who will serve as director of the program.

Leadership and family-centered care will be fostered through residency participation in CHLA’s California Interdisciplinary Leadership Education in Neurodevelopmental and Related Disabilities (CA-LEND) Training Program, which educates health professionals to shape effective health policies, programs, and outcomes for children and youth with neurodevelopmental and related disabilities, including autism spectrum disorder.

Applicants to the program must have a minimum of one year of clinical experience in pediatric physical therapy, a California State license to practice physical therapy, and a degree from an APTA-accredited physical therapy program. Successful completion of the residency includes passing written, oral, and practical examinations, and completion of a systemic review suitable for publication. For more information, please visit pt.usc.edu/residency/pediatric.
**DIVISION KICKS OFF $5 MILLION CAMPAIGN INITIATIVE**

At a celebratory picnic on October 18 attended by faculty, staff, students, and the Board of Councilors, the USC Division of Biokinesiology and Physical Therapy formally inaugurated its $5 million fundraising campaign initiative—part of the Campaign for the University of Southern California.

During the event, Dr. James Gordon, Division associate dean and chair, announced the establishment of the Kathleen Bice Clinical Excellence Scholarship and reported that the Board of Councilors has pledged 100 percent participation in the campaign.

For more campaign kickoff photos, visit tinyurl.com/Division-Campaign-Kickoff

To watch the campaign video, visit pt.usc.edu/campaign
WE TRANSFORM LIVES

The USC Division of Biokinesiology and Physical Therapy has a long history of pioneering and shaping the profession. To ensure our continued leadership in education, research, and clinical practice, we launched an unprecedented, six-year initiative to raise $5 million—the largest ever undertaken for a physical therapy program in the United States.

Our initiative is allied with the Campaign for the University of Southern California, a multiyear campaign to advance USC’s educational mission and expand the University’s positive effect on the quality of life for people in Los Angeles and throughout the world. “We Transform Lives” may sound somewhat grandiose. But the fact is, the teaching, research, and patient care at the USC Division of Biokinesiology and Physical Therapy have a tremendous impact on many lives.

IN THE NEXT FEW PAGES . . .

. . . you’ll read about Lisette Ackerberg, whose deep gratitude for her treatment for Parkinson’s disease by Dr. Beth Fisher, associate professor of clinical physical therapy, led her to fund a scholarship named for Dr. Fisher.

. . . you’ll meet Dr. William Alvarenga, a recent graduate (2012) of the Doctor of Physical Therapy (DPT) program, whose extraordinary empathy for patients and ability to apply his clinical knowledge in innovative ways affected the lives of his patients—and who, in turn, deepened his understanding of what it means to be a physical therapist.

. . . you’ll discover how Dr. Christina M. Dieli-Conwright, assistant professor of research, utilizes her expertise to design and implement clinical exercise interventions to improve the long-term health of survivors of women’s cancers.

. . . you’ll learn about our research faculty’s use of technology to improve the lives of infants at risk for developing cerebral palsy and other developmental diseases, and how observing the lives and needs of patients contributes to the success of Division research.

The Division’s initiative will allow us to continue to transform people’s lives by providing funding to support our high-achieving students with scholarships; to recruit and retain distinguished teaching and research faculty; to equip our facilities with the latest technology; and to sustain groundbreaking research on disease, injury, and aging that drives breakthroughs in scientific understanding and treatment.

Read on to find out how each of the Division’s four pillars has a direct impact on our continued success in the classroom, in the laboratory, and in the clinics.

continued
When Dr. William Alvarenga first heard about physical therapy, he was attracted to the idea of hands-on work with people. As a former high school football player, he wanted to work with athletes and figured his path would be orthopedics.

But once he embarked on the clinical education required of DPT students in the Division, he realized that “it wasn’t just athletes but everyone under the sun whom I wanted to be involved with in some way.” An outpatient spinal cord clinic in Miami was “an eye-opener,” he said, “because a lot of the patients were my age and had gone through traumatic events and still were trying to live a normal life.”

Dr. Alvarenga had a life-changing moment during his clinical rotation in an acute rehabilitation facility. He had come to know a 40-year-old business owner being treated for a subarachnoid hemorrhage and left-sided hemiparesis, who was unable to extend his wrist. One day, the man said that he “wanted to be able to use his hand better.” Consulting
Though higher education is a significant investment in the future, prospective students should be able to choose a physical therapy school based on the education they will receive, not on the cost. To attract the most talented applicants from around the country, the Division of Biokinesiology and Physical Therapy is committed to increasing gift aid and scholarships that lessen the tuition burden.

When students like William Alvarenga can focus on their studies with fewer worries about tuition, they are better prepared to be leaders in the field and to have a positive effect on patients’ lives.

with his clinical instructor, Dr. Alvarenga decided that electrical stimulation was indicated. When the unit was on, he and the physical therapist yelled as loudly as possible to encourage the man.

“And then it happened, a flicker of movement in his hand,” Dr. Alvarenga wrote in his essay for the Beth E. Fisher Scholarship. “The moment [the patient] realized he moved his hand, the four men in the room began to cry tears of joy.”

The scholarship, which Dr. Alvarenga received last year, recognizes a student who demonstrates empathy for patients, the ability to integrate knowledge from various sources and apply it in innovative ways, and the potential to contribute to clinical practice.

In his essay, he also pointed out the urgent need for practitioners “who can not only speak Spanish but also relate to cultural differences with empathy.” Growing up with parents from Honduras and El Salvador, he understood the cultural barriers to healthcare. In the Latino community “you don’t go to a doctor unless it’s a medical emergency, a last resort,” he said, noting that his own grandfather will not see a physical therapist for his back pains, preferring to use a “magic ointment” he was given by a friend.

Dr. Alvarenga eventually decided that he wanted to be in an acute inpatient setting, dealing with diverse medical issues. Now a physical therapist on the neurology and orthopedic floor at Providence St. Joseph Medical Center in Burbank, he has also worked in the ICU and the infectious disease unit.

In addition to the Fisher scholarship, Dr. Alvarenga received an APTA Minority Scholarship Award and the Order of Areté, USC’s highest award for graduate students. He also received the Division’s Golden Cane Award for Outstanding Service to the Community, honoring his leadership roles with Fit Families, the Division’s community wellness program, and a Division volunteer program at a pediatric clinic in Mexico.

In a letter recommending him for the Fisher scholarship, Oscar Gallardo, program director of Fit Families, wrote that Alvarenga had diffused a difficult situation—an outbreak of violence between two male siblings—by “being attentive to their needs, listening to their concerns, and utilizing his own personal attributes of caring and empathy.”
In the late 1990s, when Dr. Beth Fisher, associate professor of clinical physical therapy, was working on her PhD in biokinesiology at the Division, she taught a continuing education course at Harvard University. A physical therapist in the class was treating Norman Ackerberg—founder of The Ackerberg Group, a real estate development, investment, and management company—for multiple sclerosis. She called Norman’s petite, vivacious wife Lisette. “You have to have Beth,” she said. “She’s a genius!”

Dr. Fisher discovered that Norman, a tall man in his 60s, was sitting with his knees up to his chest. She realized that he needed a higher platform to be able to stand up—a simple adjustment that made a big difference. Asked by Lisette to treat Norman, Dr. Fisher assembled a Division-based team that included Dr. Robert Landel, now professor of clinical physical therapy, and Reiko Kurihara, MPT ’94.

When Lisette disclosed that she had early-onset Parkinson’s disease. Dr. Fisher began treating her, too, and their relationship blossomed into a true friendship. Then came the life-changing gift.

Inspired by her work with Lisette, Dr. Fisher decided to specialize in the
field of Parkinson’s disease. The Norman and Lisette Ackerberg Foundation stepped in to provide most of the funding she needed for her postdoctoral research at the Division, working with two USC faculty members, microbiologist Dr. Michael W. Jakowec and neurologist Dr. Giselle Petzinger.

“We’re one of the few translational groups for Parkinson’s disease in the country,” Dr. Fisher said, referring to findings from lab experiments that are translated to clinical practice—including the potential for exercise to induce positive brain changes in Parkinson’s disease patients.

Grateful for her care, Lisette also personally funded a scholarship in Dr. Fisher’s name. The Beth E. Fisher Scholarship supports a Doctor of Physical Therapy student at the beginning of his or her third year.

Norman died in December 2004 at age 76, but Lisette is still leading an active life despite having lived with Parkinson’s disease for a quarter-century. In March, Lisette celebrated her 75th birthday with a typically lavish gesture—a party for 100 people. While she has had to deal with falls and other motor complications that are common as the disease progresses, an important goal for her is to stay active and ambulatory.

“I’ve had physical therapists from all over the country,” she said, “but I attribute my success to the PTs from USC. There is nothing like their attention, their attitude, and their knowledge. They also motivate. I think they gave me extra years. I wouldn’t have been the same had I not had such excellent care.”

During the past few years, Lisette added Monday sessions with Dr. Christopher Powers, associate professor in the Division, to her therapy program. At his Movement Performance Institute, an Alter-G (“antigravity”) Treadmill fills with air to lift the body—rather than using harnesses—minimizing stress on compromised muscles. “He has been excellent in encouraging and motivating me,” Lisette said. “I’m able to spend more time on the treadmill at greater speeds and with better posture.”

Lisette has also generously supported the Ackerberg Team within the Team Parkinson organization, which participates each year in the L.A. Marathon’s 5K Run/Walk under the umbrella of The Parkinson’s Alliance to raise funds for Parkinson’s disease research. The Division has received about $50,000 annually from this event.

It came as no surprise to those who know Lisette that—despite pouring rain on the day of the 5K and her big birthday party that night—she showed up with a therapist on either side and walked the walk herself.
Dr. Christina M. Dieli-Conwright, PhD’09, who joined the faculty in December 2011 as assistant professor of research, utilizes her expertise in exercise physiology to design and implement clinical exercise interventions to improve the long-term health of survivors of women’s cancers. As director of the Division’s Women’s Health and Exercise Laboratory (WHEL), her focus is to understand the physiological and behavioral principles of interactions among metabolic disorders, menstrual disturbances, skeletal muscle function, and exercise performance.

Now in the initial planning stages, with an anticipated opening in spring 2014, WHEL will adjoin and complement the Division’s Clinical Exercise Research Center (CERC), directed by Dr. E. Todd Schroeder. The WHEL space will be used to conduct research that is both qualitative (interviewing participants) and quantitative (endocrinology-related biochemical analyses of blood and muscle tissues). Exercise interventions will be carried out in the CERC. Participants will be drawn from USC Norris Comprehensive Cancer Center and LAC+USC Medical Center, as well as from healthy populations on campus and in the community.
Dr. Dieli-Conwright is currently studying the underlying physiologic mechanisms that cause cancer treatment-related weight gain and loss in breast cancer patients. Last year, she received widespread media attention for an investigation revealing that women with a healthy body weight before and after a breast cancer diagnosis are more likely to survive the disease in the long term.

“One of the main concerns with breast cancer survivors,” she said, “is that once they go through chemotherapy and radiation, there are often side effects such as weight gain and adopting a more sedentary lifestyle. The big lifestyle link is obesity. There is an approximately 60 percent increase in risk of breast cancer recurrence in obese survivors when compared to normal-weight individuals.”

Research suggests that the risk of breast cancer recurrence is strongly reduced in individuals who are physically active before and after diagnosis. Dr. Dieli-Conwright’s goals are to design exercise interventions to improve cancer survivors’ ability to survive other medical conditions and to disseminate lifestyle interventions that would alleviate the presence of other diseases in order to improve patients’ odds of overall survival.

She recently received a Five-Year Career Award from the National Cancer Institute for an investigation examining the effects of a 16-week clinical exercise intervention on metabolic syndrome components in 100 early-stage breast cancer survivors. Metabolic syndrome is a cluster of risk factors that predispose an individual to develop diabetes and cardiovascular disease, such as central adiposity (“belly fat”), elevated blood pressure and dyslipidemia, and glucose intolerance. The exercise intervention will take place in the CERC.

Unlike earlier breast cancer-survivor studies, which typically enroll women who completed treatment 5 to 20 years earlier, Dr. Dieli-Conwright’s study is enrolling participants soon after they complete their therapies. “This is the time you can change your lifestyle and stay on track,” she said.

A graduate of Cal Poly San Luis Obispo and California State University, Northridge, Dr. Dieli-Conwright was a postdoctoral research fellow in the Division of Center Etiology at the City of Hope (2009-2011), where she investigated the effect of participation in physical activity on endometrial and breast cancer risk in more than 133,000 women enrolled in a study funded by the National Institutes of Health. She is also interested in other women’s health issues, including the effects of estrogen therapy on skeletal muscle mechanisms.

Her recent publications include “Hormone therapy and maximal eccentric exercise alters myostatin-related gene expression in postmenopausal women,” published this year in the Journal of Strength and Conditioning, and “Does hormone therapy counter the beneficial effects of physical activity on breast cancer risk in postmenopausal women?” published last year in Cancer, Causes, and Control.
Developing a Physical Therapy Intervention for Preterm Infants at High Risk for Cerebral Palsy

Cerebral palsy is the most common diagnosis of children referred to physical therapy. Yet intervention often begins in their first or second year, when the children have already developed atypical movement patterns that interfere with the ability to walk and contribute to other impairments that hinder the development of efficient walking.

Barbara Sargent, PT, MS, PCS, a doctoral candidate in biokinesiology, is researching motor development of three-month-old infants developing typically and infants born prematurely, at high risk for cerebral palsy. The critical difference between these populations is selective movement—typically developing infants can move the joints of the leg separately, while preterm infants at high risk for CP are less capable of these movements.

Sargent is using a computerized, infant-activated mobile to reinforce typical leg movements in three-month-old preterm infants. Her goal is to provide a scientific foundation for an intervention that would allow physical therapists to reinforce selective leg movements of preterm infants at risk for cerebral palsy.

For the first two minutes of the intervention, Sargent’s research team collects data on the infants’ leg movements using a motion analysis system. For the next six minutes, the mobile is programmed to move—the stuffed animals appear to dance—whenever the infants kick upward to a certain height.
“We were trying to determine whether infants learn that it’s their leg movements that cause the mobile to move,” Sargent said. “We also wanted to see if the infants change the way they move their legs when interacting with the mobile.”

Sargent’s research to date has shown that the infants usually learn quickly how to activate the mobile, and about half the full-term infants changed their kicking patterns from the first to the second day. Now her team is collecting kicking data on preterm infants.

Both parents and infants have enjoyed the activity. One mother of an infant born prematurely told Sargent that he started kicking frantically under his own mobile at home, frustrated that it didn’t respond like the one in the lab.

Sargent, who works with Dr. Linda Fetters, director of the Development of Infant Motor Performance Laboratory (DIMPL), has received a Promotion of Doctoral Studies (PODS) II Scholarship from the Foundation for Physical Therapy for her research as well as the 2011 Viva J. Erickson Award for exceptional achievement in a PODS II Scholarship.

“Eventually, what we’d like to do is create a system that can be used at home,” Sargent said. The plan is to combine existing technology—position sensors (mounted on stretchy fabric like a tennis wristband and slipped onto the infant’s ankle), a conventional mobile, and a wireless connection to a laptop or iPad, or even a smartphone—so that families can simply flip a switch to begin a play activity that will help their infants develop more typical kicking patterns.

Dr. Nicholas Schweighofer, a computational neuroscientist in the Division, is further extending the reach of Sargent’s work by designing mathematical models to customize the mobile intervention protocol for each infant. Based on the data Sargent is collecting on both full-term and preterm infants, he will be able to determine—for each infant—the optimum intervention profile.

“We’re using technology in a very creative way,” said Dr. Fetters. “And once we have the [at-home] intervention set up, it can also be used for infants with spina bifida, who have reduced leg action, and infants with Down syndrome, who kick much less than typically developing infants. Infants learn quickly how to move the mobile. They not only figure it out but they also reduce their leg exploration in nonproductive areas. I’m absolutely amazed by how smart they are.”
A Fulbright Scholar from Sri Lanka continued her education at the Division this summer. Gamage Amara Damayanthi Perera, chief physiotherapist of the Burns and Reconstructive Surgical Unit of the National Hospital of Sri Lanka, is one of the relatively few foreign-trained physical therapists to receive the educational exchange scholarship for physical therapy studies in the United States.

Perera, who was nominated by the United States–Sri Lanka Fulbright Commission, said that she chose USC as her host institution because of the quality of the Division’s professional instruction. “As a result of my exposure to different clinical and academic settings,” she said, “I hope to develop a link between the University of Southern California and Sri Lankan physiotherapy for future collaboration.”

During her months at USC, Perera worked with Division faculty and staff, and observed clinicians at Keck Hospital of USC, LAC+USC Medical Center, and Shriners Hospital for Children. She attended numerous classes and lectures in the USC Doctor of Physical Therapy program to study our teaching methods and learn about the curriculum, and she observed in the Division’s research labs.

Legislation establishing the Fulbright program, now in its sixty-fifth year, was sponsored by U.S. Senator J. William Fulbright. The awards assist a limited number of scholars, selected on the basis of academic excellence, for post-graduate study. Nominated candidates are reviewed by the Fulbright Scholarship Board and, if approved, are matched with host universities. Dr. Sharon DeMuth, adjunct assistant professor of clinical physical therapy, served as the Division’s Fulbright program coordinator for Perera.

On June 9 and 10, Division students, faculty, and alumni participated in FUNfitness screenings at California State University, Long Beach, for athletes competing in the Southern California Special Olympics. The screenings help identify the athletes’ flexibility, strength, balance, and aerobic conditioning deficits. Developed by the American Physical Therapy Association as part of the Healthy Athletes program, FUNfitness also addresses Special Olympic athletes’ ongoing health needs by providing a hands-on opportunity for athletes, coaches, and family members to learn exercises from physical therapists. The Division looks forward to participating in the FUNfitness screening at the fall games on December 8 and 9 in Fountain Valley and Irvine, where 1,100 athletes from throughout Southern California will compete. If you are interested in volunteering, please contact Dr. Cheryl Resnik at resnik@usc.edu.
FACULTY CONTRIBUTE TO SYMPTOM-BASED BOOK FOR PHYSICAL THERAPISTS

More than 40 current and former members of the Division faculty have contributed to a new book, *Diagnosis for Physical Therapists: A Symptom-Based Approach* (F.A. Davis Co., June 2012), which enables clinicians to quickly identify the underlying pathology, determine whether physical therapy is appropriate for a patient’s condition, and decide on the next step in patient care.

Organized into three major sections, Adult Pain, Adult Non-Pain, and Children, the book presents succinct descriptions of each condition, including details about clinical presentation, contributing pathology or pathophysiology, confirmatory tests, and potential treatments. The book’s five editors include Dr. Kornelia Kulig, professor; Dr. James Gordon, associate dean and chair; and Dr. Hugh G. Watts, adjunct associate professor.


Dr. Powers also coauthored the following publications:


**George J. Salem, PhD,** associate professor at USC, Sean S.-Y. Yu, Man-Ying Wang, Sachithra Samarawickrame, Rami Hashish, Leslie Kazadi, and Gail A. Greendale coauthored “The Physical Demands of the Tree (Vrikasana) and One-Leg Balance (Utthita Hasta Padangusthasana) Poses Performed by Seniors: A Biomedical Examination,” *Evidence-Based Complementary and Alternative Medicine* 2(1), 2012.


“Barefoot Running: The Science Behind the Fad” (The Huffington Post, posted online August 14) summarizes research by Division PhD candidates Rami Hashish and Sachithra Samarawickrame. They found that in barefoot running, there is a shift in muscle and ligament demand from the knee to the ankle and its supporting structures. (Barefoot runners strike the ground with the ball of the foot rather than with the heel.) Neophyte barefoot runners tend to experience calf muscle fatigue, leading them to switch to the traditional heel-strike pattern, with increased risk of knee injury. To optimize performance, the researchers suggest eccentric training of the calf to strengthen the muscle while it’s being lengthened.

On August 3, NPR News (“The Science Behind Olympic Athletes’ Six-Pack Abs”) quoted Dr. E. Todd Schroeder, assistant professor of clinical physical therapy, on the hot topic of muscle definition. “It all starts with individual muscle cells, or fibers,” he said. “When you work out, you get sore. That soreness is muscle damage [which] signals the muscle cell to produce more protein, so that you get more proteins within that muscle fiber.” He told the interviewer that a combination of diet, fat-burning endurance training, and muscle-building resistance exercises were the key to making the most of our genetic inheritance.

In an August 15 column about the ankle and hamstring injuries of USC sophomore receiver George Farmer, a Daily Breeze.com writer remarked that—because Coach Lane Kiffin does not permit interviews about players’ medical treatment—Dr. Christopher Powers could not be asked if he were treating Farmer. “Chris Powers is at the cutting edge of studies of biomechanical aspects of human movement,” the writer added. “He is an associate professor in the Division of Biokinesiology and Physical Therapy at USC.”

“Scientific Results: Yoga for Health and Wellbeing,” a video released in August by the National Center for Complementary and Alternative Medicine (NCCAM), highlights new research by Dr. George Salem, associate professor, on the effects of yoga on healthy seniors. For the past 30 years, Dr. Salem has been using biomechanics and specialized high-tech equipment, such as force platforms and high-speed cameras, to study how exercise targets the musculoskeletal system. The goal of his groundbreaking “Yoga Empowers Seniors” study is to provide information for yoga instructors creating programs for seniors who may be experiencing yoga for the first time. Dr. Salem’s research will also enable clinicians and therapists to design individualized programs for patients.

“We recreate their poses,” Dr. Salem said of the seniors who participated in the research project, “and show them what their skeletal system would look like. They get to see their muscles light up and do different things. It’s very innovative and creative, and that’s what makes it fun.”

Dr. Susan Sigward, assistant professor of clinical physical therapy, has received a one-year grant from the Zumberge Fund Individual Grant program for her project, “The Development of Postural Strategies in Children.” The $27,000 award includes $2,000 in mentor funding for Dr. Robert Gregor, adjunct professor.
Dr. Samuel R. Ward was honored with the Division’s Distinguished Alumnus Award—which recognizes professional accomplishments with high distinction—at the Division’s Academic Convocation and White Coat Ceremony in August.

“I am pleased to ‘carry the torch’ and continue to make my university proud,” Dr. Ward said. “I had many great mentors at USC: Chris Powers and George Salem on the research side, and Kyle Baldwin and Jena VanLoo on the clinical side. I will be forever grateful to them.”

An associate professor in the Departments of Radiology, Orthopaedic Surgery, and Bioengineering at the University of California, San Diego, Dr. Ward investigates relationships between structure and function in skeletal muscle at the UC San Diego Muscle Physiology Laboratory. A comprehensive understanding of these relationships lays the groundwork for new developments in the fields of orthopaedic surgery, neurology, and rehabilitation.

In his lab, Dr. Ward uses X-ray, MRI, PET, ultrasound, and bioluminescence techniques, along with direct measurements in human subjects, to bridge the gap between basic science and clinical practice. His ongoing research involves three distinct areas: 1) the acute and chronic effects of botulinum toxin on muscle structure and function; 2) the influence of skeletal muscle design and performance on knee, hip, lumbar spine, and shoulder pathology; and 3) muscle adaptations in response to tendon injuries and surgical transfers.

One of Dr. Ward’s research projects, under the auspices of the U.S. Army, seeks to determine the effect of load carriage training on lumbar spine kinematics and disc geometry in Marine Corps recruits. Another project, funded by the National Institutes of Health, proposes to develop a new instrument for measuring the properties of muscles commonly used in tendon transfer surgery and assessing post-operative function. Dr. Ward’s other current studies include “Rotator Cuff Degeneration and Repair” and “Muscle Biology and Biomedical Response in Cerebral Palsy.”

His honors include a Research Prize from the International Society for Study of the Lumbar Spine (2011), Faculty Publication of the Year Award from the California Chapter of the APTA (2009), the APTA’s Eugene Michels New Investigator Award (2008), and a Post-Doctoral Scientist Award from the American Society of Biomechanics (2008). At USC, he received the Order of the Golden Cane, the Division’s highest honor for graduating students, and the Jacquelin Perry Research Award.

Coauthor of more than 200 publications, 66 in peer-reviewed journals, Dr. Ward has also developed a patented muscle biopsy clamp and an in vivo cartilage compression device (patent pending). Dr. Ward’s service to the profession includes leadership positions in the APTA’s Section on Research and the Annual Conference Scientific Review Board of the APTA’s California Chapter.

Before attending USC, Dr. Ward received a BS degree in physical therapy from California State University, Long Beach. He pursued postdoctoral work in orthopaedic surgery at UC San Diego while working as a research biologist in the Department of Orthopaedic Surgery at the Veterans Administration Medical Center.
Gary Souza, PT, MS ’00, DPT ’00
Creating Pyrotechnic Magic

You might think that owning and practicing in a physical therapy clinic and serving as an adjunct professor of clinical physical therapy at the Division would be more than enough to keep Gary Souza busy. But he also pursues a parallel career that’s all about creating star-spangled spectacles.

An APTA Board Certified orthopedic clinical specialist, Gary practices with his wife Liz (DPT ’96) at Gary M. Souza, P.T. & Associates in Diamond Bar, where services include working with athletes recovering from back injuries and with sports-specific training programs.

At the Division, Gary is a member of the team that teaches a course in clinical management of orthopedic dysfunction. Liz Souza, a former adjunct faculty member at the Division, recently served as a guest lecturer in the Basics of Patient Management course.

Gary Souza can thank his great-grandfather Manuel de Sousa—founder of the family fireworks business now known as Pyro Spectaculars, Inc.—for the colorful side of his life. As vice president of the company and a hands-on creator of 27 years of fireworks shows for Macy’s Fourth of July Fireworks®, Souza was interviewed by several news media this summer—including CNBC, MSNBC’s Rock Center with Brian Williams, CBS San Francisco, and The Wall Street Journal.

Fourth of July is “the one time where they all sit there in America and say ‘Wow,’” he told MSNBC. “My motivation is the memory of the faces of the people looking at the show.”

Forty thousand pyrotechnic shells are fired during the 25-minute “Ignite the Night” show. Eight computers ensure that the four 300-foot-long barges on the Hudson River fire their shells in unison and in synchrony with the musical score—patriotic and pop favorites—that Souza developed in collaboration with Macy’s staff.

The process of creating each show takes an entire year, he said, beginning with a study of which effects and colors were most effective the previous year—both for the live audience and the telecast. The next steps involve producing working drawings and globally sourcing the best selection of fireworks.

Souza told The Wall Street Journal that his work is like making paintings on a vast scale, or “doing a motion picture where the actors are the fireworks.”

But unlike a painting or a movie, it all has to come together on one day. The big challenge, he told CBS San Francisco, is dealing with the regulatory issues and numerous local agencies, assembling the crew, “and pulling this off all within the course of about 10 days, given weather issues and humidity and wind and rain and whatever comes your way.”

Souza has also created pyrotechnical fireworks displays marking the 125th anniversary celebration of the Statue of Liberty (October 2011) and the 75th anniversary of the Golden Gate Bridge (May 2012), as well as shows in other cities and countries.
**Staying in Touch**

**ALUMNI AID PEDIATRIC PATIENTS AT HOME AND ABROAD**

Julie Steiner Bursey, DPT ’00, is cofounder of the Bay Area nonprofit AbleCloset. Entirely volunteer-run, the 501(c)3 organization was founded to provide children with special needs with a “lending library” of special-needs equipment. Based in Santa Clara, AbleCloset accepts donations of equipment that children have outgrown or no longer need. The organization also has a grant program to purchase new equipment for children who are unable to receive funding from another source. Bursey writes that she hopes to add another site and expand to the East Bay.

Samantha Dutrow, DPT ’11, traveled to Belize in June, where she provided pro bono physical therapy services to the Hillside Clinic in the Toledo District, taught physical education and basic health in local schools, and worked on construction projects.

“I never would have imagined that working with pediatric patients on the dirt floor of a hut, with wild pigs trying to eat my pant legs, would be so rewarding and an absolute blast!” Dr. Dutrow writes. “Hillside has established international clinical rotations with several PT schools in the States, and they are currently looking for PTs to come and be clinical instructors during the students’ eight-week rotations. I look forward to going back ASAP, helping facilitate student learning, and giving back to the wonderful people of Belize.”

In July, Dr. Dutrow started a new job in the Outpatient Rehabilitation Services department at Lucile Packard Children’s Hospital at Stanford. “Despite the fact that I may now work for a PAC-12 rival,” she writes, “I secretly teach my patients the Fight On hand gesture when no one else is looking!”

Cathy (Schecter) Harcke, DPT ’98, has published *Cracking the Motor Mystery: A Fun and Creative Approach to Gross Motor Basics*, a guide for parents and teachers of toddlers, preschoolers, and school-age children.

**USC CLASS OF ’82 REUNION IN NOVA SCOTIA**

From left: Bryan and Marilyn MacKay-Lyons, Joan M. Walker (Division faculty 1978-1986), Barbara Casey, and Steve Sadowsky, at the June 21-24 mini-reunion of the MS ’82 class at Shobac, Upper Kingsburg, Lunenberg County, Nova Scotia, Canada. With the MacKay-Lyons as hosts, the group enjoyed activities that included sheep herding, kayaking, hiking, brunch at a 150-year-old bakery, a lobster dinner, and (writes Dr. Walker) “too much wine!”
1954  
John (Jack) Cheever, PT, writes, “Physical therapy has provided me with a tremendous amount of continuing satisfaction to help mankind walk a firm and straight path through life.”

1970  
Brenda (Milam) Shelton, PT, lives in Corvalis, Oregon and owns a private practice, Stepping Out Physical Therapy and Custom Orthotics. She specializes in musculoskeletal and osteopathic manual therapy. “I also make custom orthotics to complement my practice of complete body alignment,” she writes.

1974  
Carin Shuler, PT, BS, MS, DPT, has been appointed Rehabilitation Director for the Visiting Nurse Association (VNA) of the Inland Counties, in Riverside, California. She previously owned a private practice that provided pediatric to geriatric care, on-site support for local employers, and professional education and internship programs. At the VNA, Dr. Shuler will focus on better aligning rehabilitation and in-home nursing services to support integrated patient care. A board member of the Professional Development Committee of the USC PTAA, Dr. Shuler has also served the Division as an adjunct clinical faculty member.

1987  
Daryl Lawson, MPT, was awarded tenure and promoted to associate professor of physical therapy education at Elon University in Elon, North Carolina.

1994  
Peter Zepelak, MPT, DPT, was recently recertified as an orthopedic specialist (OCS) and was named a fellow of the American Academy of Orthopedic Manual Physical Therapists (FAAOMPT). He launched a seminar company and began teaching a continuing education course on spinal manipulation. Dr. Zepelak works at Park Nicorette Clinic in Minneapolis.

2003  
Judy Burnfield, PT, PhD, director of the Institute for Rehabilitation Science and Engineering at Madonna Rehabilitation Hospital in Lincoln, Nebraska, led a research team that spent three years developing the Intelligently Controlled Assistive Rehabilitation Elliptical Training System (ICARE). The project was a partnership with SportsArt Fitness, Inc., a leading manufacturer of professional-grade fitness equipment. Unlike a typical elliptical trainer, the ICARE offers powered support, enabling people with weakness and/or limited mobility to begin and maintain exercise to improve walking ability. The motorized control has a sensor that adjusts the level of support during exercise. Features include an adjustable-height seat, overhead body-weight support system, and grab bars. The ICARE will be sold throughout the United States and in 80 countries worldwide, at a fraction of the cost of a traditional robotic gait device.

2005  
Lecille Gomez DeGuia, DPT, introduces the newest addition to her family: Lucas Gomez DeGuia (5 lbs., 14 oz.), born on June 4. He joins four-year-old sister Rayann and two-year-old brother Russell at the DeGuia home in Castro Valley, California.

2008  
Michelle (Rey) Merritt, DPT, married Andrew Merritt on June 9. Dr. Merritt works at Belding Physical Therapy in Sparks, Nevada.

2009  
Andrew Fung, DPT, completed his orthopedic residency in 2010 and received a manual therapy fellowship in 2011, both at the Ola Grimsby Institute in San Diego. Dr. Fung was also named a fellow of the American Academy of Orthopedic Manual Physical Therapists (FAAOMPT). He works at Pacific Thera Physical Therapy in Portola Valley, California.

2010  
Daniel C. Hsien, PT, DPT, OCS, obtained his Orthopaedic Clinical Specialist certification in June 2012 after successfully completing Casa Colina’s Orthopaedic Physical Therapy Residency program. Dr. Hsien, who lives in Laguna Niguel, works at California Therapy Solutions in Huntington Beach. During the past year, he also completed two Ironman distance races, Ironman St. George 140.6 and Full Vineman 140.6.

2011  
Erica “Ricki” Hanson, DPT, works at Physical Therapy Care in Westchester, California.

Andrew Myler, DPT, passed the NCS exam and is now a Board Certified Specialist in neurologic physical therapy. A resident of Pasadena, he works at Rancho Los Amigos National Rehabilitation Center.
Dear Alumni and Friends,

Congratulations to our newly elected PTAA Board members, Dr. Davis Koh, president-elect, and Dr. Cherise Lathan, treasurer!

Our recent elections have established a new PTAA Executive Committee, composed of the Board of Directors (including President, President-Elect, Secretary, and Treasurer) and the Program Directors, who are appointed by the Board. All Executive Committee members will serve for two-year terms.

At the January 2012 strategic planning meeting, the Executive Committee established a new organizational structure based on four programmatic pillars. They provide clear lines of leadership and accountability, and enhanced involvement opportunities for members and students:

- Professional Development, to advance professional growth and lifelong learning through continuing education
- Events & Participation, to promote professional and social networking through social and recreational events
- Fundraising, to establish a tradition of advocacy through fundraising that supports the strategic priorities of the PTAA and the Division
- Membership & Leadership Development, to foster the growth and value of the PTAA through leadership development and mentoring activities

In the coming months, we will present the revised by-laws for membership review and share more details on specific action plans and involvement opportunities.

In the meantime, I'd like to introduce your new Executive Committee, whose photos appear below.

Fight on!

Kathy Sullivan, PhD ’98, PT, FAHA
Interim President, USC PTAA

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**BOARD OF DIRECTORS**

- **Interim President**
  Kathy Sullivan, PT, PhD ’98, FAHA

- **Vice President/President-Elect**
  Davis Koh, MPT ’96, DPT ’99, MBA ’07, GCS, CSCS

- **Secretary**
  Janis Brown, PT, DPT ’01

- **Treasurer**
  Cherise Lathan, PT, DPT ’10, NCS

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**PROGRAM DIRECTORS**

- **Director of Professional Development**
  Carin Shuler, BS ’74, MS ’00, DPT ’00

- **Director of Events & Participation**
  Lindsey Fong, DPT ’05, OCS

- **Director of Fundraising**
  Caroline Wilson, DPT ’02, OCS

- **Director of Leadership Development**
  Jesse Pasag, PT, DPT ’07, OCS

- **Director of Membership**
  Mary Grace Tan, DPT ’06
USC at CPTA 2012

On September 28, the USC Division of Biokinesiology and Physical Therapy held an alumni reception at the 2012 CPTA Conference in Santa Clara, California. More than 60 alumni, students, and friends attended the reception.

For more USC at CPTA photos, visit tinyurl.com/USC-CPTA2012

Members of the DPT Class of 2007: From left, Claire McLean, Mary Barry, Tina Franchitto, David Ojeda, and Ronaldo Canonigo.

1 From left: Thaomy Ngo Beltran, DPT ’06; Sharon DeMuth, PT, MS ’95, DPT ’97, adjunct assistant professor of clinical physical therapy; Board of Councilors members David Hayes, PT, and Covey Lazouras, DPT ’01; PTAA Board member Carin Shuler, PT, BS ’74, MS ’00, DPT ’00; and Lecille DeGuia, DPT ’05, — 2 Mitchel Kaye, PT, BS ’73; Nancy Krueger, PT, BS ’89; Walter Abbey, PT, BS ’77; and Joyce Campbell, PT, BS ’88, MS ’77, PhD ’86. — 3 Ann Vivian, PT, MPT ’89; Amy Shimer, DPT ’10; Rachel Lateiner, DPT ’09; and Jennifer Lee, DPT ’09.

USC WAS ALSO WELL REPRESENTED AT THE CPTA CONFERENCE AWARDS LUNCHEON. Recipients of the 2012 Rising Star Award, from left: Erin Hayden, PT, DPT ’06, OCS; Leigh Langerwerf, PT, DPT ’04, OCS; and Lauren Leporini, PT, DPT ’09, NCS. (Not pictured) Dr. Rob Landel received the Royce P. Noland Award of Merit, established to acknowledge exceptional service and achievement by an individual to the profession of physical therapy. Dr. Landel was invited to deliver the Noland Lecture at the 2013 CPTA Annual Conference in Pasadena. George Beneck, PT, PhD ’10, OCS; Todd Davenport, PT, DPT ’02, OCS; and Sara Mulroy, PT, MS ’89, PhD ’95 received 2012 CPTA Publication Awards.

USC AT CSM 2013

USC ALUMNI RECEPTION
TUESDAY, JANUARY 22 / 6:00 – 7:30 P.M.

Hilton San Diego Bayfront — 1 Park Boulevard, San Diego, California
For more information, call (323) 442-1193 or email villagra@usc.edu
Did you know that LinkedIn Alumni lets you find other USC PT alumni even when you’re not already connected to them?

Let’s say you want to refer a patient to a fellow Trojan in another city or state. Or maybe you’re expanding your practice and looking for clinical staff. Perhaps you want to tap the expertise of other alumni working in your specialty. Maybe your family is relocating, and you’re looking for involvement opportunities in your new city. Whatever your reason, connecting on LinkedIn Alumni can open up a new world of resources. Most importantly, it will help you stay connected with your Trojan Family and with other colleagues.

Your presence in LinkedIn Alumni also helps your PTAA in many ways, including event planning, occasional questionnaires, and simply getting the word out about what we’re doing.

Of course, you need to have a LinkedIn profile for your fellow alumni to find you. Creating one takes just a few minutes, and the payoff is huge. Remember, it’s not the LinkedIn people you know who have the greatest potential to help you. It’s the people they know.

HOW IT WORKS
LinkedIn Alumni searches are based on information you list in the Education field of your LinkedIn profile (institution name and years attended). Fellow alumni to whom you’re already connected are listed first. Then you’ll see the LinkedIn members whose years at USC overlapped with the years you were here (if you listed a class year in your profile) and with whom you share at least one connection.

To do a chronological search, pull down the top-left menu and choose Attended or Graduated. To find alumni who don’t list their year, click the box “Include people with no dates.” You can also search by Where they live, Where they work, and What they do (click on Medical and type “physical therapy” in the Search Profiles box).

So now you know. I want to encourage all alumni to build a LinkedIn profile and use the Alumni tool to find each other. After you create your profile, don’t forget to join the USC PT Alumni Association group (search “USC Physical Therapy Alumni Association”).

Do it today!

Sara Villagran Palafox
Director of Alumni Relations & Communications
PHYSICAL THERAPY MANAGEMENT OF PATIENTS WITH TMJ DISORDERS AND ASSOCIATED SYMPTOMS  
**November 10-11, 2012** — (1.5 CEUs)  
Instructor: Sally Ho, PT, DPT, OCS

SPORTS REHABILITATION SEMINAR SERIES: MODULE ON UPPER QUARTER SPORTS  
**November 29 - December 2, 2012** — (3.0 CEUs)  
Instructors: Aimee Diaz, PT, DPT, SCS, ATC  
John Meyer, PT, DPT, OCS  
Lisa Meyer, PT, DPT  
Susan Sigward, PT, PhD, ATC

UPDATE ON LUMBAR SPINE  
**December 1-2, 2012** — (1.5 CEUs)  
Instructors: Stuart M. McGill, BPE, MSc, PhD  
Kornelia Kulig, PT, PhD, FAAOMPT, FAPTA  
Mike O’Donnell, PT, DPT, OCS, FAAOMPT

INTRODUCTION TO PELVIC FLOOR MUSCLE DYSFUNCTION  
**February 9, 2013** — (.75 CEUs)  
Instructors: Aimee Diaz, PT, DPT, SCS, ATC  
Daniel Kirages, PT, DPT, OCS, FAAOMPT

HVLA TECHNIQUES FOR SPINAL MANIPULATION  
**March 15-18, 2013** — (1.5 CEUs)  
Instructors: Peter Gibbons MB, BS, DO, DM-SMed, MHSc  
Philip Tehan DO, Dip. Physiotherapy, MHSc

ORTHOPEDIC PHYSICAL THERAPY SEMINAR SERIES  
(Northern Virginia)  
**November 15 - 18, 2012**  
Module #1: Low Back and Pelvic Girdle  
Instructor: Joe Godges, PT, DPT, OCS  
2.25 CEUs PER 3-DAY MODULE

**December 7 - 9, 2012**  
Module #2: Hip, Knee, and Ankle

**January 11 - 13, 2013**  
Module #3: Foot and Thoracic Spine

**February 8 - 10, 2013**  
Module #4: Thorax, Neck, and Shoulder Girdle

**March 8 - 10, 2013**  
Module #5: Shoulder, Elbow, Wrist, and Hand