TOSCIONAL FALL 2019 / WINTER 2020 [A control of the control of t

MAGAZINE











Dear Alumni and Friends,

We are in the midst of celebrating the 30th anniversary of occupational science, which was officially born during the 1989-90 academic year when the world's first PhD students in occupational science stepped onto USC's campus. The doctoral program was the culminating response to many complex questions faced by USC faculty members throughout the 1980s, questions such as: 'Does the profession of occupational therapy need a science of its own?'; 'If so, what should its intellectual foundations include?' and, 'What unique knowledge should it generate for individuals and society?'

The responses offered by occupational science's co-founders—Professors Emeriti Elizabeth Yerxa, Florence Clark and Ruth Zemke—were framed by a number of issues of the day, issues which, perhaps unsurprisingly, continue to resonate in 2020. Chronic diseases became the leading causes of global death and disability. New digital technologies made it possible to study people in real contexts and in real time. Americans have started paying attention to the voices and rights of society's most vulnerable populations, with occupational science promising a new approach to tackling big ideas in service to humankind.

But in academia, as in life, timing isn't everything. In order for an idea to take hold, the right time often requires the right place. USC turned out to be that just-right place, where intellectual curiosity, creativity and interdisciplinary collaboration could be exercised to the fullest. USC Chan continues to be that place today, as this issue of the *USC Chan Magazine* exemplifies.

On p. 10, read about the recent special issue of the *American Journal of Occupational Therapy*, which featured nearly two dozen(!) USC-affiliated authors. On p. 14, learn about a grant-funded afterschool program which plugs neighborhood high schoolers into USC research labs, creating a pipeline for more talent and diversity in the health sciences professions. And on p. 17, travel back to the 1980s with Dr. Yerxa as she recounts the origin story of occupational science, what she rightly calls "a science of hope." That origin story —



which you can also watch unfold in our new YouTube documentary at *tinyurl.com/30yearsvideo* — is as audacious as it is optimistic about the power of occupation to change the world for the better.

USC Chan has always represented innovation and excellence in occupational therapy, and for the past 30 years, in occupational science. There is no doubt in my mind that together — USC faculty, staff, students, alumni and friends — we will continue leading the way for decades to come!

Fight On!

Grace Baranek

Grace Baranek PhD, OTR/L, FAOTA

Associate Dean, Chair and Mrs. T.H. Chan Professor of Occupational Science and Occupational Therapy USC Mrs. T.H. Chan Division of Occupational Science and Occupational Therapy

Herman Ostrow School of Dentistry of USC

USC Chan

MAGAZINE

ASSOCIATE DEAN AND CHAIR GRACE BARANEK

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The magazine of the USC Mrs. T.H. Chan Division of Occupational Science and Occupational Therapy is published twice yearly. For questions, comments, updates or story suggestions, contact Mike McNulty at *mmcnulty@chan.usc.edu* or (323) 442-2850.



COVER STORY

A SCIENCE OF HOPE | P. 17

HOW AN AUDACIOUS COMMUNITY OF SCHOLARS CREATED OCCUPATIONAL SCIENCE.

In the 1980s, scholars at USC's Department of Occupational Therapy did something so audacious, so creative, so bold that it nearly defies belief: They created an entirely new academic discipline in order to formally study the phenomenon of human occupation, its impact on health, development and quality of life and its applications to occupational therapy practices.

Three decades later, one of the discipline's founders, Professor Emeritus Elizabeth J. Yerxa, tells the story about the people, places and contexts that led to the birth of this science of hope.



ELIZABETH YERXA, GRACE BARANEK AND FLORENCE CLARK. PHOTO BY GLENN MARZANO

FEATURES

A REAL STAND-UP GUY | P. 12

Comedian Eddie Barojas' career was on the rise — with appearances, gigs and even a network sitcom spot — until severe lymphedema knocked him off his feet for six years. Now, thanks to a team of USC providers, he is standing up again and getting ready for his next act.

NEIGHBORHOOD PROGRAM'S STAR POWER | P. 14

If you don't know any doctors or scientists, it can be tough to imagine becoming one. The USC STAR program introduces local teens to real labs, and as one alumna proves, the program has already shaped the face of the occupational therapy profession.

DEPARTMENTS

UP FRONT | P. 5

Sensory processing research lab opens;
Faculty researchers present at presidential symposium; Incubator program for
Alzheimer's disparities research; OT on
Amazon Prime short film; New initiative for cognitive deficits in older surgical patients;
Medical center's big leap in rankings; Faculty duo win AOTA writer's award; Alum gives
TEDx talk.

5 THINGS TO KNOW ABOUT: DIRECTOR OF ADMISSIONS ARAMEH ANVARIZADEH | P. 7

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NEWS: SPECIAL ISSUE OF AMERICAN JOURNAL OF OCCUPATIONAL THERAPY FEATURES 23 USC-AFFILIATED AUTHORS | P. 10 RESEARCH BUZZ:
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GENNEXT:

RAY HERNANDEZ PHD '22 | P. 16

NEWS: CLASS NOW IN SESSION AS CHINA INITIATIVE PARTNERSHIP WELCOMES INAUGURAL STUDENTS | P. 24

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FACULTY MEMBERS CLAUDIA
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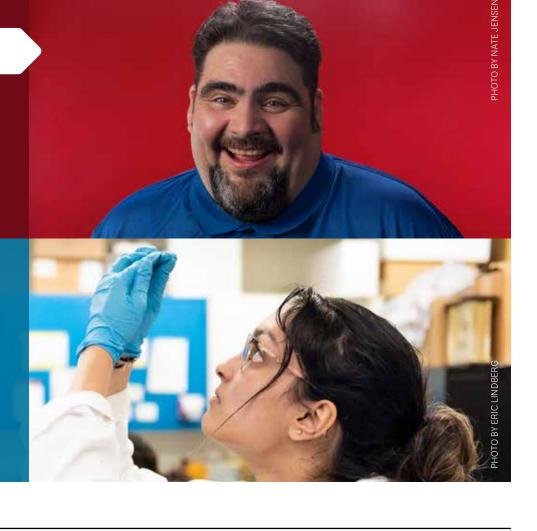
A DEEPER MEANING: POST-PROFESSIONAL PROGRAM DIRECTOR EMILY OCHI | P. 29

FEATURED STORIES

A REAL STAND-UP GUY | P. 12 Lymphedema is no laughing matter. But with the help of his Keck Hospital of USC clinicians, comedian Eddie Barojas is getting back to just joking around.

NEIGHBORHOOD PROGRAM'S STAR POWER | P. 14

Here's one way of building a more diverse profession: introduce local high schoolers to research labs on campus, connect them with mentors and a 25-years-running community grant campaign then watch their talents blossom.



CONTRIBUTORS



Calvin Lee MA '21 Interviewer, GenNext, p. 16 Meaningful occupations: I love playing the

piano and guitar, singing, jamming and just being involved in music! **About writing GenNext:** Ray informed me of how well occupational science can address various complex problems through a human-centered perspective, and now I am even more inspired to continue advocating for our profession.



Emily Ochi MA '12, OTD '13 Writer, A Deeper Meaning, p. 29 Meaningful

occupations: Traveling, cooking and spending time with my husband, Walter, and dog, Pancake.

About writing A Deeper
Meaning: There are so many
reasons why I love being an
occupational therapist, so it was
difficult to decide where to begin.
Writing the article reminded me
how fortunate I feel to have found
such a powerful and rewarding
profession!



Sandy Takata MA '15, OTD '16, PhD '21 Writer, To Be More Precise, p. 11

Meaningful occupations: My meaningful occupations tend to shift due to my dynamic interests (and my short attention span). However, I have noticed two overarching themes across my occupations: playfulness and creativity.

About pursuing a PhD in occupational science: Drs. Shawn C. Roll and Barbara L. Thompson motivated me to pursue a PhD — I had a burning and clinically relevant research question that I wanted to answer. Dr. Thompson encouraged me to believe in myself, and Dr. Roll promised to guide me along the way.



Jamie Wetherbe MA '04 Writer, A Real Stand-Up Guy,

Work has appeared in: Los Angeles Times, The Huffington Post, City of Hope

Meaningful occupations: My son, Kingston.

About writing A Real Stand-Up Guy: Interviewing Eddie was nothing short of inspiring. That he went from being bedbound to ending his hospital stay with a stand-up routine shows not only his incredible perseverance, but also the dedication of his providers to set the goal for such a unique send-off.

SENSORY PROCESSING RESEARCH LAB OPENED WITH FIELD TRIP FROM GRADE-SCHOOL MURALISTS

An entourage led by 8-, 9- and 10-yearold students from the Mirman School, a Los Angeles independent school for gifted children, visited USC Chan to see the graphic wall mural they designed as part of Associate Dean and Chair **Grace Baranek**'s newly opened research laboratory.

Plans for the mural were put in motion in 2018, when Baranek contacted Kristan Andrews, a film and television production designer and the parent of a Mirman School student.

"When Dr. Baranek approached me about creating a mural for her children's neuroscience laboratory, I thought it might be fun to involve the kids at Mirman," Andrews said.

Baranek directs the Innovations in Neurodevelopmental Sensory Processing Research laboratory — affectionately known as the "insp!re" lab. Comprised of a multidisciplinary team of experts, the insp!re lab focuses on advancing knowledge and raising awareness of early risk signs of autism spectrum disorder and other childhood neurodevelopmental disorders.

"We really believe that meaningful innovation happens at the intersection of science, creativity and technology," Baranek said. "The Mirman students collaborated to give us a child's-eye view of wonder and possibility, which I know will resonate with everybody who comes to participate in our research studies here on campus."



GRACE BARANEK WELCOMES MIRMAN SCHOOL STUDENTS TO USC CHAN. PHOTO BY HANNAH BENET



SYMPOSIUM STARS TWO FACULTY MEMBERS AND A NEW PRESIDENT

USC Chan faculty members **Sook-Lei Liew** MA '08, PhD '11 and **Beth Pyatak** '02, MA '04, PhD '10, MS '15 were invited to join other faculty speakers from across the USC Health Sciences campus to showcase their research at a September symposium hosted in celebration of USC President Carol Folt's inauguration ceremonies. In TED-style talks, Liew and Pyatak shared their research projects and aims with the overarching themes of discovery, creativity and collaboration.

"It was really, in a way, an eye-opener for me because it's one thing to say we want to collaborate, and then it's another thing completely to see what collaboration can do to advance ideas," said Folt, who has a background in marine science. Folt was installed as USC's 12th president in July. She is the first female to lead the university.

Liew echoed many faculty and staff members' hopes for President Folt's administration.

"I think it was an amazing opportunity to be able to share what we're doing across a wide number of people from different schools here," Liew said. "I'm excited for [President Folt's] leadership and her ability to enable us to just keep doing what we're doing, and hopefully build capacity to do more of it."



PHOTO COURTESY OF USC EDWARD R. ROYBAL INSTITUTE ON AGING

INCUBATOR PROGRAM TO REDUCE ALZHEIMER'S DISPARITIES

Assistant Professor of Research Stacey Schepens Niemiec Postdoc '13 (pictured above, seventh from the left) was selected to participate in a scientific training program funded by the National Institutes of Health that supports junior scientists to develop innovative research approaches for reducing Alzheimer's-related health disparities.

The Interdisciplinary Aging Research to

Address Health Disparities in Alzheimer's Disease and Related Dementias (ADRD) program is funded by the National Institute on Aging and runs in partnership with the USC Edward R. Roybal Institute on Aging. The two-year program supports 10 emerging scholars with structured mentorship and two annual conferences, the first of which was held at USC in October 2019. The goal of the program is to accelerate the next generation of junior scientists, like Schepens Niemiec, who are working on projects that can ultimately reduce

ADRD health disparities. Schepens Niemiec's research focuses on the underlying mechanisms that facilitate or inhibit healthy aging and various methodologies that emphasize activity participation.

"The ADRD training program is a perfect opportunity to strategically build my research skills and interdisciplinary network in the arena of health disparities in dementia research," Schepens Niemiec said. "That will undoubtedly improve the effectiveness of the interventions I am currently investigating."



FACULTY CLINICIAN ON SCREEN IN AWARD-WINNING SHORT FILM

Associate Clinical Professor **Jess Holguin** '96, MA '05, OTD '11 played the role of himself in the award-winning short film *ASIA A*. The film follows a young man coping with a recent spinal cord injury, including a dramatic point-of-view scene with Holguin administering a sharp/dull sensation assessment.

The film's title refers to the American Spinal Injury Association (ASIA) tests used to define and describe the severity of a patient's spinal cord injury to help determine future rehabilitation and recovery needs. *ASIA A* is available for streaming on Amazon Prime.

BRAIN HEALTH INITIATIVE FOR OLDER SURGICAL PATIENTS WITH COGNITIVE IMPAIRMENTS

A team of providers, including faculty occupational therapists at the Keck Medical Center of USC, recently launched Brain Health Initiative, a multidisciplinary quality improvement program for older surgical patients who are at risk for cognitive impairment. The initiative's goal is to ensure best practices during the perioperative period for older patients identified as at increased risk of postoperative delirium and perioperative neurocognitive disorders.

When patients 65 years and older screen positive for cognitive impairment, before surgery they meet with USC Chan faculty occupational therapists for a full assessment of baseline physical and mental function.

"We're interested in neurocognitive function, issues of delirium and postoperative neurocognitive delay and recovery from a functional perspective," said Associate Clinical Professor **Phuong Nguyen** MA '10, OTD '11.

To make improvements as quickly as possible prior to surgery, occupational therapists will make occupation-based recommendations in order to optimize functional outcomes. An OT will also perform a post-op cognitive assessment in the hospital, as well as a post-discharge assessment at the patient's follow-up appointment. Patients with outstanding needs can then be referred to USC's Geriatric Assessment Program (GAP) clinic to develop a comprehensive plan for long-term care.

The Brain Health Initiative was featured in an article by the American Society of Anesthesiologists available at *tinyurl.com/KeckBHI*.

THINGS TO KNOW ABOUT:

Arameh Anvarizadeh '05, MA '06, OTD '07

BY YASMINE PEZESHKPOUR MCM '16

The last time that Arameh Anvarizadeh '05, MA '06, OTD '07 had set foot in the halls of the division, it was as an OTD candidate. Now a seasoned clinician and instructor, Anvarizadeh has returned as USC Chan's new director of admissions with the goal of setting the gold standard for occupational therapy recruiting and admissions. Anvarizadeh plans to incorporate what she calls the "holistic admissions process," looking at diversity, equity, inclusion and leadership among applicants to better address the therapeutic needs of the ever-changing population. Here are five more things to know about Dr. Anvarizadeh:

She originally set out to be a neurosurgeon. "Neurology and how the brain works seemed so intriguing to me, so I thought that becoming a neurosurgeon would be really amazing," she says. "It wasn't until I learned about OT in my undergrad organic chemistry class that I learned how I can work with patients through recovery. That really stuck with me, and the rest is history!"

She first wanted to practice in adult neurorehab but ended up in pediatrics. "I always tell students, 'Don't think you're going to finish school and focus on one

thing," she says. "I never planned to go



into pediatrics, but when I graduated, the opportunity to work with children with upper motor neuron disorders presented itself, and I really felt I could grow and develop the most from that experience, and I truly did!"

In 2014, Anvarizadeh and a few OTs started the Coalition of Occupational Therapy Advocates for Diversity, a nonprofit group working to improve diversity and inclusion in the profession. "My goal is to inspire those from diverse backgrounds to succeed and feel like they have a seat at the table and are represented within

the profession."

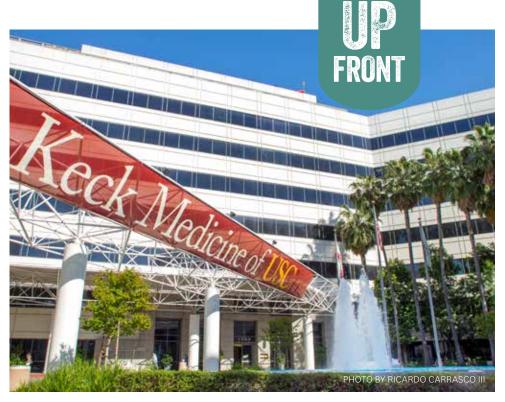
She has been to every continent except Antarctica. "Usually, my travel is work-related, involving speaking engagements or professional visits, but I always try to extend my trips to experience and enjoy the different cultures too!"

In her next life, she envisions herself as a potter or a DJ. "There's something so intriguing to me about pottery making. It seems so rewarding from start to finish. And I just think it would be amazing to be a successful female DJ because of the way music connects people!," she says with a laugh.

KECK MEDICAL CENTER CELEBRATES A SWEET 16

Keck Medical Center of USC, which includes Keck Hospital of USC and USC Norris Cancer Hospital, was ranked no. 16 in *U.S. News & World Report's* 2019-20 Best Hospitals Honor Roll. The academic medical center, which recently celebrated its 10-year anniversary under USC ownership, was also ranked among the top five hospitals in California.

The Best Hospitals ratings are released annually to assist patients and their doctors in making informed decisions about where to receive care for life-threatening conditions or common elective procedures. *U.S. News* evaluated more than 4,500 medical centers nationwide across 16 specialty areas and nine procedures or conditions. Only 165 hospitals (approximately 3 percent) were ranked in at least one specialty. More than three dozen USC Chan faculty practitioners, clinical doctoral residents and staff members work at the medical center.





FACULTY WIN AOTA AWARD FOR THE WRITE STUFF

USC Chan faculty members **Stephanie Tsai** MA '16, OTD '17 and **Elyse Peterson** MA '11, OTD '12 were named recipients of the 2020 Jeanette Bair Writer's Award by the American Occupational Therapy Association for their *OT Practice* magazine article on the use of outcome measures in acute care practice. Peterson and Tsai, both assistant clinical professors primarily responsible for providing patient care at Keck Hospital of USC, will receive the honor during AOTA's 2020 conference in Boston.

Their article, titled "Championing High-Quality Care: Integrating Assessments into Occupational Therapy Acute Care Practice," originally appeared in the April 2019 issue of *OT Practice*. In it, Tsai and Peterson described the process of selecting and integrating outcome measures in acute care, hospital-based occupational therapy practice.

"Throughout the article, we highlight the importance of using outcome measures as a crucial way to demonstrate occupational therapy's distinct value in acute care," Tsai said. "Since our article was published, we have actually received many emails from occupational therapists and department managers all over the country, sharing their challenges with using outcome measures and that they have felt encouraged that we were able to address so many barriers and increase formalized assessment use in our department."



OCCUPATIONAL THERAPY TAKES CENTER STAGE IN ALUM'S TEDX TALK

Alumnus and USC Chan Board of Councilors member **Shawn Phipps** '97 took to the TEDxAlmansorPark stage in 2019 to recall the challenges and triumphs faced by one of his former patients who sustained a severe traumatic brain injury in a motor vehicle accident.

In his talk "Occupational Therapy and Neuroplasticity After Brain Injury," which has been viewed more than 18,000 times on You-Tube, Phipps describes therapeutic approaches to reorganizing the brain's neural pathways through engagement in the ordinary and extraordinary activities of daily life. The story's protagonist also joins Phipps onstage in an inspiring testimony to the power of occupational therapy and neuroplasticity when recovering after life-changing trauma.

Phipps is the Chief Quality Officer and Associate Hospital Administrator at Rancho Los Amigos National Rehabilitation Center. The TEDxAlmansorPark event was organized by alumnus **Bill Wong** MA '11, OTD '13.



News Briefs

Lectures, grants, awards — there's always so much going on at the USC Chan Division of Occupational Science and Occupational Therapy. Keep your finger on the pulse with these division news briefs:



ROLL NAMED FELLOW
OF THE AMERICAN
INSTITUTE OF
ULTRASOUND IN
MEDICINE

Associate Professor Shawn Roll has been selected a Fellow of the American Institute of Ultrasound in Medicine, a multidisciplinary medical association dedicated to advancing the safe and effective use of ultrasound in medicine. "I am honored to be recognized by the AIUM," Roll said. "[I] look forward to continued contribution of evidence and creation of opportunities for the use of ultrasound and sonography in novel areas such as injury prevention and rehabilitation to expand use beyond traditional medical diagnostics." Roll uses diagnostic sonography for the evaluation, prevention and treatment of musculoskeletal disorders in his Musculoskeletal Sonography and Occupational Performance Laboratory. Roll is director of the doctor of philosophy degree in occupational science program.



JORDAN, PYATAK
NAMED FELLOWS
OF THE AMERICAN
OCCUPATIONAL
THERAPY ASSOCIATION

Professor of Clinical Occupational Therapy Katie Jordan MA '03, OTD '04 and Associate Professor Beth Pyatak '02, MA '04, PhD '10, MS '15 have been added to AOTA's Roster of Fellows. The distinction is meant to recognize occupational therapist members who have made significant contributions over time to the association and the profession through knowledge, expertise, leadership, advocacy and guidance. Jordan is being recognized for her "reimbursement-related expertise and academic medical center leadership." Pyatak's contributions include "research excellence in diabetes, chronic conditions management."

The two USC Chan faculty members will be recognized officially during the annual awards and recognition ceremony at the 2020 AOTA Conference in Boston.



NEUROPHYSIOLOGY AND SENSORIMOTOR SCIENCE EXPERT JOINS USC CHAN FACULTY

Assistant Professor of Research Christopher Laine joined the USC Chan faculty in 2019. Laine earned his bachelor's degree in biomedical engineering from Rutgers University, before pursuing a doctor of philosophy degree in physiological studies from the University of Arizona. His research focuses on the neurophysiology of human movement control as well as developing measures of nervous system integrity to guide clinical assessment and interventions. Last year, Laine was part of a winning team at USC's "Voice Assistants for All Hackathon" for Amplify, a voice-assisted technology that uses gamification tools for speech therapy for children who have cerebral palsy. Before coming to USC Chan, Laine did postdoctoral research in neurorehabiliation engineering in Germany and at the USC Division of Biokinesiology and Physical Therapy.



PHD STUDENT
RECEIVES
PREDOCTORAL
AWARD FROM
NATIONAL INSTITUTES
OF HEALTH

Sandy Takata MA '15, OTD '16, PhD '21 is the first USC Chan student to have ever received a NIH F31 Predoctoral Individual National Research Service Award. She received the two-year, full-time fellowship from the National Institute of Arthritis and Musculoskeletal and Skin Diseases in 2019. It will provide financial assistance

for Takata's research project, titled "Novel Precision Medicine Approach to Advance Rehabilitation of Surgically Repaired Tendons of the Hand," which is using sonography to help establish evidence-based clinical protocols for hand tendon surgery recovery. Read more on that study in Research Buzz on p. 11. Takata's doctoral mentors are Associate Professor Shawn Roll and Associate Professor of Preventative Medicine Wendy Mack from the Keck School of Medicine of USC.



USC CHAN
FACULTY-LED AFTER
SCHOOL PROGRAM
AWARDED USC
WICKED PROBLEMS
PRACTICUM

Educational inequality is the "wicked problem" that Envisioning Futures aims to tackle after receiving a USC Wicked Problems Practicum grant in 2019. Led by Assistant Professor of Clinical Occupational Therapy Catherine Crowley OTD '06, Professor Gelya Frank and Assistant Professor of Clinical Occupational Therapy Kristy Payne MA '16, OTD '17, the endeavor will bring together USC Chan faculty and students with USC undergraduates who tutor high school students at Foshay Learning Center. The project aims to overcome negative messages about the lack of hope for a positive future that can be endemic within low-income neighborhoods. Using narrative-based strategies, the USC team will design and facilitate activities that help adolescents explore their unique identities while creatively building scenarios about their future possibilities and accomplishments.

"Envisioning Futures is an after-school program that provides the space for USC undergraduates and Foshay students to connect over topics such as exploring personal identity, goal-setting, cultivating resilience and imagining positive future paths for themselves," Payne said. "It's been a joy to see the USC students step into their leadership roles and to observe Foshay high school students begin to expand the view of their own potential."

SPECIAL ISSUE OF AMERICAN JOURNAL OF OCCUPATIONAL THERAPY FEATURES 23 USC-AFFILIATED AUTHORS

Katie Jordan guest-edited recent issue on primary care.

BY MIKE MCNULTY '06, MA '09, OTD '10



Nearly two dozen Trojan authors — including faculty and staff members, students and alumni — were published in the September/ October 2019 issue of the *American Journal of Occupational Therapy*. The special issue focused on primary care, an area of occupational therapy research and practice that has significantly grown throughout the past decade. Associate Chair of Clinical Services and Clinical Professor Katie Jordan MA '03, OTD '04 served as the issue's guest editor.

"At USC, we're showing how occupational therapy makes a real difference in primary care," said Jordan, who oversees all clinical services offered by USC Chan faculty clinicians, including occupational therapy services at Keck Hospital of USC and USC Norris Cancer Hospital. "Considering the broader context of health care's shifts toward preventive, team-based approaches, I believe our profession is incredibly well positioned for what's happening now and for what comes next."

A number of Trojans have been working for years to increase the visibility, presence and contributions of occupational therapy services throughout USC's health enterprise. According to Associate Clinical Professor Ashley Halle '08, MA '11, OTD '12, the division's coordinator of primary care residency and services, USC Chan clinicians and doctoral residents currently provide primary care services at 12 sites across the greater Los Angeles area.

The journal issue also highlighted several of USC Chan's research and educational programs conducted with primary care settings and populations, including lifestyle-based diabetes management, environmental modifications for adults with autism spectrum disorder and USC's interprofessional geriatric care curriculum.

Five of the articles in the AJOT issue featured USC Chan faculty as lead authors, including Rebecca Cunningham MA '15, OTD '16, Leah Stein Duker MA '06, PhD '13, Halle, Jordan and Beth Pyatak '02, MA '04, PhD '10, MS '15. Additional faculty co-authors were Sharon Cermak, Jesús Díaz '05, MA '08, OTD '09, Stacey Schepens Niemiec Postdoc '13, Samantha Valasek MA '15, OTD '16 and Cheryl Vigen MS '03, PhD '07.

Other co-authors included staff members Jeanine Blanchard MA '99, PhD '10 and Elia Salazar; former students Maggie King '16, MA '17, OTD '18 and Hee Kyung Sadie Kim MA '17, OTD '18; and alumnae Alison Cogan MA '12, PhD '17, Kiley Hanish MA '02, OTD '11, Sheama Krishnagiri MA '89, PhD '12 and Pollie Price MA '94, PhD '03.

Given the collaborative, team-based nature of primary care, it's no surprise that five faculty members from the Keck School of Medicine of USC were also co-authors, including the Keck School's Dean Laura Mosqueda. Altogether, the issue expanded the body of evidence supporting occupational therapists' unique contributions to primary care teams, and demonstrated the distinct value of occupational therapy services for individuals, groups and populations in the contexts and communities where they lead everyday life.

"Occupational therapy practitioners bring a holistic perspective to caring for others," Jordan said, "and there is no better place for providing 'whole person' services than in primary care settings."

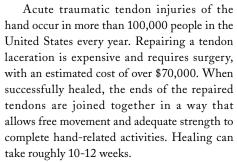
Research Buzz



TO BE MORE PRECISE

How sonographic imaging can advance rehabilitation of surgically repaired hand tendons.

BY SANDY TAKATA MA '15, OTD '16, PHD '21
OCCUPATIONAL SCIENCE PHD STUDENT AND AWARDEE, NIH F31
PREDOCTORAL INDIVIDUAL NATIONAL RESEARCH SERVICE AWARD



The timing to initiate wrist and hand motion after surgery is critical to recovery. Doing movements too early, especially during functional activities, risks rupturing the tendon repair; however, delaying motion for too long risks the development of scar adhesions that impede hand mobility and often leads to permanently limited function. Although we are aware that there are many surgical, rehabilitation and personal factors that can affect a successful tendon repair, the evidence is unclear as to when we should initiate movement for optimal functional recovery.

Given this current issue in hand therapy, my research examines a new way of evaluating when it is appropriate to initiate movement that we hope will be more efficient, safer and appropriately individualized, especially when compared to current standardized care. Specifically, I believe musculoskeletal sonography can help solve this problem. Sonography is an inexpensive, non-invasive and pain-free imaging tool that provides realtime pictures of anatomical structures beneath the skin. Clinicians can use sonography to detect healthy and problematic changes in healing tendons. In addition, researchers have identified biomarkers that correlate with immediate and long-term outcomes following



tendon repairs through sonographic assessment. Important biomarkers for tendon recovery include measures of tendon thickness, edema, hypervascularization and tendon gliding.

Thanks to the NIH National Institute of Arthritis and Musculoskeletal and Skin Diseases, I was fortunate enough to become the first ever USC Chan PhD student to receive a F31 Predoctoral Individual National Research Service Award. According to the NIH, the purpose of this competitive award is "to enable promising predoctoral students with potential to develop into productive, independent research scientists, to obtain mentored research training while conducting dissertation research." In addition to this fellowship award, which provides mentored training, I have received funding from the Society of Diagnostic Medical Sonography and the American Hand Therapy Foundation to support data collection for my dissertation.

The focus of my dissertation research is to establish a protocol for capturing images of the healing tendon, measuring key sonographic biomarkers and relating those biomarkers to functional recovery. Using these data, we can provide robust information to the clinical and scientific community regarding successful tendon healing over time. By relating this healing process to functional recovery, we can identify indicators of successful or problematic recovery that can inform clinical decisionmaking. Using musculoskeletal sonography in this way can help ensure that people with tendon injuries are receiving client-centered care that is tailored to their healing process. This research will serve as an initial step towards better understanding the ideal time to initiate active motion for each individual.

As an occupational therapist who specializes in hand therapy, I am excited to leverage this training and research predoctoral fellowship award to help develop a translational model for implementing sonography into clinical rehabilitation. The opportunities provided by this award will allow me to develop proficiencies in musculoskeletal sonography, the processes of tendon healing as well as quantitative research methods and data analysis techniques.

Beyond the scope of my dissertation, I see potential uses of sonography in hand rehabilitation for treating individuals with many other upper extremity diagnoses as well. Clinicians can use sonography to observe dynamic movement of anatomical structures and evaluate how these structures interact with each other during functional activities. Even more exciting, sonography can be used to further support individualized care by measuring tissue response to interventions across time. Moreover, imaging can also aid in educating individuals about their injuries, promoting adherence to clinician recommendations or be used as a direct intervention tool, such as with real-time biofeedback.

Developing expertise in these areas and carrying out my proposed research will enable me to address some of the current problem areas in hand therapy, and will be fundamental to my becoming a leader in musculoskeletal rehabilitation research. Most importantly, I see this fellowship as a catalyst for improving our clinical approaches to musculoskeletal rehabilitation and, ultimately, the outcomes of the people whom we serve.

A REAL STAND-UP GUY



ot many patients cap off a month-long hospital stay with a stand-up comedy routine before a room full of patients and providers.

"I had a joke about how when I first came to the hospital I couldn't do one push-up, so if I tripped and fell face-first into a puddle, I'd drown," says Eddie Barojas, 42. "Everyone started laughing, and I got chills. To tell jokes and get that feeling again — to start feeling normal again — it was really emotional."

For six years, Barojas could barely stand, let alone do a push-up. In 2013, the once prolific performer developed severe scrotal lymphedema, a buildup of fluid that causes swelling of the genital area.

In a matter of weeks, the lymphedema got so large that the promising actor and comedian went from appearing on the popular CBS sitcom *Mike & Molly* to being confined in bed.

"It got to be almost 50 pounds, or the size of a large watermelon," he says. "I couldn't walk; I couldn't wear clothes; it completely interfered with my daily life."

Barojas sought help from several providers to treat his condition.

"I stopped counting after seeing about 35 specialists," he says. "I could never get a direct answer as to what caused it and what would make it go away. Until I finally met the people at Keck — I don't know why I met them so late."

Last year, Barojas saw Leo Doumanian, associate professor of clinical urology at the Keck School of Medicine of USC, who was able to develop a treatment plan.

To remove the mass, Doumanian performed the first of two surgeries in February of 2018, removing about 25 to 30 percent of the lymphedema. The surgery was so extensive that Barojas needed a year to heal.

In May of 2019, Doumanian and his team performed a second surgery to remove the remaining lymphedema.

"He basically freed me of this thing I'd been carrying around for six years," says Barojas.

Though the surgery was a success, Barojas was left with extensive wounds, not to mention the damage that the mass had caused to his body over time.

A few days following his procedure, Barojas was admitted to the Inpatient Acute Rehabilitation Unit (IRU) at Keck Hospital of USC for an intensive rehabilitation regimen to regain his independence.

"I had no endurance — I could barely stand or even sit," he explains. "They wanted to get me back into my life again."

"I HAD NO ENDURANCE — I COULD BARELY STAND OR EVEN SIT," HE EXPLAINS. "THEY WANTED TO GET ME BACK INTO MY LIFE AGAIN."

Working out a new type of routine

The three-week inpatient program included three hours a day of intensive therapy services — a combination of occupational and physical therapies — five days a week, as well as care from other medical professionals, including lymphedema and wound care specialists.

"It's a truly collaborative effort with an interdisciplinary team," says Lucy Hosoda MA '16, OTD '17, assistant professor of clinical occupational therapy at the USC Chan Division and Barojas' lead occupational therapist. "The structure of our program is very unique, so we see patients from all over the state."

While the team treats a plethora of diagnoses, including post-transplant patients and those with a range of neurological and orthopedic conditions, Barojas' case proved unusual even for the Keck IRU.

"We've seen patients with variations of his diagnosis, but Eddie was young and so impacted, being homebound for so long, that was unique," Hosoda says.

Going into rehab, Barojas didn't know what to expect in terms of progress.

"Being able to get up and walk was my main goal," he says. "Then to see what [the team] was offering and how they were going to help me, it went completely above and beyond any of my expectations."

Prior to surgery, Barojas required assistance with instrumental activities of daily living, including showering, dressing, shopping, cooking and cleaning.

"Our goal for occupational therapy was to facilitate his return to these roles and routines," Hosoda says.

Barojas' occupational therapy sessions included exercises and techniques to improve his balance, endurance, sitting tolerance and his ability to stand and walk for longer and longer periods of time.

The IRU has a simulated home environment that allows patients to practice these skills so they translate to daily life. For example, Barojas' work on standing endurance could carry over to occupations such as standing at the sink while brushing his teeth. These simple routines were a welcome return to normalcy for Barojas.

"It's really odd what your body forgets over time," he says. "I almost forgot how to shower correctly, to walk correctly, to clean."

The occupational therapists also fashioned several pieces of adaptive equipment to set

up Barojas for success, from a wheelchair he could use for showering, to tools to help while dressing.

"Each time I wasn't able to do something, [the team] never gave me the opportunity to say, 'No, I can't do this," he says. "They always had something or would make something to help. They were two steps ahead of me, and that helped me to think of solutions for myself after I came home."

A not-so-tough crowd

During his treatments, Barojas strived to match that positive, resourceful attitude. For instance, when physical therapy providers would request 10 leg lifts, Barojas would do 11.

"Whatever I was asked to do, I wanted to give one extra and not give up," says Barojas. "The staff was absolutely amazing. I could literally cry thinking of how well they treated me."

Once the Keck team discovered he was a stand-up comedian, they planned a special send off, even creating a flyer to promote Barojas' performance.

"That was something Eddie was really passionate about; he showed staff videos of him performing," Hosoda says. "He didn't realize we'd be able to do something like that in our unit"

During the show, Hosoda got to see the phenomenal progress Barojas had made over a few weeks.

"To go from not being able to sit up, to doing something like that was really exciting and special for the staff to see," she says. "A lot of the patients said they felt inspired, especially those earlier on in their treatment, to see someone so independent."

Now living back at home, Barojas continues to focus on getting stronger, eating well and losing weight.

"I still use the tips and techniques I learned at Keck every day," he says.

In the coming months, Barojas plans to return to the stand-up stage and hopes his providers will once again be in the audience.

"I'd love to invite them to a real show at a real comedy club, to see me back up there and know that they're the reason," he says. "They are amazing people that truly motivate you and care about you; they are angels willing to go above and beyond; that's what Keck was: angels who went above and beyond."





JENNY MARTÍNEZ '09, MA '10, OTD '11. PHOTO COURTESY OF JENNY MARTÍNEZ

Neighborhood program's STAR power

If you don't know any doctors or scientists, it can be tough to imagine becoming one yourself. By introducing local high schoolers to research labs on campus, the USC STAR program is one way to get more diversity in science and health fields.

BY ERIC LINDBERG '07

Jenny Martínez '09, MA '10, OTD '11 speaks up for people who don't have a voice in the health care system, and ensures they're treated with dignity.

A scientist and expert in occupational therapy for nearly a decade, Martínez studies how to best care for older adults and people with debilitating injuries. She also passes along her wisdom to the next generation, teaching occupational therapy students how to conduct studies and serve clients with respect.

It might be surprising, then, to hear that she was once a teenager unsure of her place in science. Martínez remembers feeling a little scared, apprehensive and intimidated the first time she entered a research lab on USC's Health Sciences Campus as a junior in high school. Back then, it all seemed so overwhelming. Lab benches teeming with complicated equipment. Scientists busily buzzing around with an air of knowledge. USC students setting up their experiments with confidence.

Even though she loved science, going to college and pursuing a career in a STEM field felt out of reach for Martínez. Only a few kids from her East Los Angeles neighborhood were in college, let alone studying science or engineering.

But stepping into the USC lab as a high school student helped her recognize her own potential and confirmed her hope: She had the intelligence and drive to become a scientist.

"The experience set me on a clear path to success," Martínez says. "It helped me understand what I was capable of and connected me to supportive mentors who had gone to college for science and engineering themselves. It gave me role models."

Martínez thrived in USC's Science, Technology and Research (STAR) program, which pairs students from Francisco Bravo Medical Magnet High School with USC faculty members to work on research. It's one of dozens of community projects that benefit from the USC Good Neighbors Campaign. Now in its 25th year, the USC Good Neighbors Campaign has raised more than \$25 million, largely through donations by USC faculty and staff members. These funds provide hundreds of grants to local community programs. When the campaign began 25 years ago, it raised \$185,000 and funded nine grants. Last year's campaign raised \$1.4 million and funded 50 programs in communities like Boyle Heights, El Sereno and Lincoln Heights that surround the Health Sciences Campus.

Campaign helps community programs thrive

For Martínez, her experiences in the STAR program encouraged her to follow her passion for science. Along with a bachelor's degree in health promotion and disease prevention studies from the Keck School of Medicine of USC, she earned her bachelor's, master's and clinical doctoral degrees in occupational therapy from the USC Chan Division, where she later served as a faculty member for five years. She is now an associate professor at Thomas Jefferson University in Philadelphia.

Martínez looks back with gratitude for the encouragement and support she received as a young aspiring scientist unsure of how to turn her dreams into reality.

"There are many systemic barriers to college access and success, even when the school is next door," she says. "Programs like these increase diversity in higher education and expand access to equitable, valuable experiences for students."





NIRALI PATEL. PHOTOS BY ERIC LINDBERG

Virtually all alumni of USC's STAR program attend college. More than 90 percent go to top-tier research universities, and 88 percent declare a major in a science or engineering field.

The program is not only a pipeline to increasing diversity in health and science professions (according to the National Center for Education Statistics, 96 percent of Bravo Medical Magnet's students come from underrepresented racial and ethnic groups), it can forever change the trajectory of students' educational outcomes.

"The money raised can provide access to lifechanging upward economic and social mobility for members of the local community," Martínez says.

Hands-on learning with USC faculty

USC researcher Daryl Davies has witnessed the remarkable success of the program since the early 1990s. He started in STAR as a mentor when he was a doctoral student, then continued when he joined the USC research faculty. Now he directs the program. Dozens of high school students, including Martínez, have gained research skills in his lab at the USC School of Pharmacy, where he also serves as associate dean for undergraduate education.

"They get hands-on lab experience with real science projects — doing funded research to develop new molecules, discover groundbreaking technologies to treat diseases, engineer new devices, you name it," Davies says. "They are involved in cutting-edge research as high school students and become junior scientists."

ALUMNI OF USC'S STAR PROGRAM

>90% | Go to top-tier research universities

88% | Declare a major in a science or engineering field.

Nirali Patel is one of those scientists-intraining. The 16-year-old joined Davies' lab this past summer to help with research into new treatments for alcohol use disorders. With the guidance of her mentor, PhD candidate Larry Rodriguez, she's learning about biochemistry, molecular biology and more.

"We puncture oocytes — they are frog eggs — and inject them with a certain kind of RNA," Patel says. "We try to activate receptors within them that can regulate the effects of alcohol. So, in other words, they can alter our tendency to drink alcohol."

An aspiring pediatrician, Patel plans to study biology in college. She hopes her hands-on experience in the lab will give her an edge in the application process and jumpstart her undergraduate career. She has good reason to think it will: Her brother completed the STAR program in 2015, also in Davies' lab. He recently earned his bachelor's degree at UCLA in microbiology.

"[My brother] always told me how much he loved working there and being part of something bigger that could help people," Patel said. "Ever since I found out about it, I wanted to get into a lab there."

Bonding over college admissions advice

Patel lives in Gardena, Calif., and each day she takes a long bus ride to Bravo, near the Health Sciences Campus in East L.A. She spends three or four afternoons a week in Davies' lab, often staying until 5 p.m. or later, until her mom picks her up afterwards. But she says it's worth the extra time and energy.

"I like forming networks with the other people there," she says. "I'm usually a shy person, but I've found close friends with the people in my lab, the other USC students. They always give me advice about college applications, because they are almost due."

STAR participants get a chance to bond with other lab members during a full-time summer internship for six weeks before their senior year of high school. They also receive a stipend for their work, along with funding to create and present research posters, and celebrate with their families at an awards banquet when they graduate from the program. Davies says those perks would be impossible without the support of the Good Neighbors Campaign grant.

Martínez says that the stipend enables many students from lower-income backgrounds — students who might otherwise have to get a job to help support their families or save money for college — to take the valuable internship during high school.

"Spending that time on a learning experience crucial to my success in college was an investment in my future."

GenNext

Meet the Trojans pushing occupational science and occupational therapy forward. Interview by Calvin Lee MA '21

RAYMOND "RAY" HERNANDEZ PHD '22

Age: 29

Hometown: Glendale, Calif.

Undergraduate studies: Psychobiology at the University of California, Los Angeles; Master of Science in occupational therapy at California State University, Dominguez Hills

Meaningful occupations: Playing video games, playing basketball, meditating and drawing T-shirt graphics **Describe occupational therapy in a few words:** The use of occupation for therapeutic effect.

This year marks the 30th anniversary of the first occupational science PhD student cohort starting at USC; what does occupational science mean to you?

The idea of occupational science is so interesting because of its accentuation on occupation as a unit of study. I am in Associate Professor Beth Pyatak's Lifestyle Redesign for Chronic Conditions lab, and we use this lens to study lifestyle interventions and to investigate the association between occupational engagement and other variables, like health and quality of life. Occupational science is constantly growing, and I hope that one day it can be prominently perceived within the realms of academia and society.

Did working as a school-based occupational therapist in the Los Angeles Unified School District inspire your venture into the PhD, and if so, how?

Having been in practice for a few years, I eventually wanted to find a perspective on addressing emotional regulation issues in a way that would let me use a different occupational lens. Many times within my caseload, children would be referred for self-regulation, but I could only really recommend sensory-based approaches, instead of other potential options I had in mind. Respectively, this experience inspired me to pursue the PhD in occupational science so that I may coordinate these ideas towards discovering more sufficient theories of justification that can be applied in practice.

What advice can you share for people thinking about pursuing a PhD in occupational science?

Back then, I never really thought of myself as a potential researcher. I did not think it was within the realm of possibilities. However, as I started to embrace my interest in conceptual thinking and got more involved in research as a master's student, it began to seem like a possibility. My reasoning for stepping away from practice was because I loved the idea of ideas, and I wanted to see how far I could go with occupational science. I would say that if you are open to autonomy when creating your own adventure, picking your own area of study and figuring out ways to sell your idea and make it interesting, then try going for the PhD!





How our audacious community of scholars created occupational science.

BY ELIZABETH J. YERXA '52, MA '53
PROFESSOR EMERITUS OF OCCUPATIONAL SCIENCE AND OCCUPATIONAL THERAPY

Based on prepared remarks that introduced the "Founders Panel" during the September 2019 USC Chan Occupational Science Symposium.



I invite you to time travel with me, back to 1987, when the proposal for a new Doctor of Philosophy Degree in Occupational Science was submitted to the Graduate School at the University of Southern California.

Our small faculty were located in old wooden barrack buildings, on an otherwise abandoned site at Rancho Los Amigos Hospital, with no control over our space or our budget. We recognized both our vulnerability in the university and our commitment to occupational therapy and the rich academic traditions of our department, personified by former Department Chair Margaret Rood; A. Jean Ayres '45, MA '54 and Mary Reilly '51. Over a span of eight years we had become a community of scholars, devoted to understanding occupation, with the goal of translating that knowledge into a new scholarly degree.

Mary Reilly once remarked that occupational therapists have an optimistic view of human nature — how true! We were audaciously optimistic because we saw the potential contribution of what we called "occupational science" to the universe of knowledge constituting the university and,

thus, to the people served by our profession. Let us explore the context in which our effort took place within the profession, the university and the department.

The profession in crisis

In the 1980s, occupational therapy was experiencing a sort of Kuhnian crisis regarding its knowledge base and practice. It seemed possible that the concept of "occupation" might disappear from occupational therapy, to be replaced by technique and modality.

Such reduction also threatened to weaken or eliminate mental health practice. Leaders in the profession recognized that we needed to know much more about the occupational human before we could develop comprehensive theories of intervention to provide practitioners with the knowledge they needed to better serve humankind. Mary Reilly had led the way at USC by developing the occupational behavior frame of reference. Her master's students' theses each explored some aspect of occupation as basic knowledge which was then applied to practice through case method.

In 1985, only 17 percent of occupational therapy faculty nationally held doctoral

degrees, a paucity that limited scholarship and made our schools vulnerable in universities. Since only one small PhD program existed at New York University, most occupational therapy faculty seeking doctorates had to pursue them in other disciplines, contributing their research to that field, not occupational therapy. A new scholarly degree in occupational science would enable faculty to expand and deepen the knowledge base of the profession, and ensure the relevance of their research to the core questions of the field.

Back at USC, as we revised the master's curriculum and developed faculty research programs, it became obvious that we needed a conceptual framework for organizing the vast knowledge of occupation and enabling research to contribute new ideas to practice. Simultaneously, leaders from both the American Occupational Therapy Association and the American Occupational Therapy Foundation urged our USC faculty to develop such basic knowledge.

Through several years of argument, study, experimentation and discovery of resources, we developed a multi-leveled systems model of the occupational human, interacting with



the environment, over the three time spans of learning, development and evolution. This became the organizing framework for the PhD curriculum, and our response to the threat of reductionism.

The maturing university

As USC became a major research university around this time, several of its academic departments were scrutinized to assess their contribution to research and scholarship. Some were discontinued because they were deemed too technical. This possibility became a crucial issue for us due to both our lack of visibility in the university and the corresponding lack of understanding of our discipline. As we further developed occupational science, we recognized that becoming an academic discipline would enable our department to contribute significantly to achieving the university's goals.

Thus, we developed a plan to establish collegial relations with other relevant disciplines, engage in collaborative research and become recognized for our scholarship. To this end, we established strong relationships with the College of Letters, Arts and Sciences,

culminating in a university-wide presentation of our occupational science conceptual framework and plans for developing the new PhD curriculum. We called this our "polymath" meeting since all faculty members invited were distinguished scholars, some in several fields. At the close of the meeting, the consensus of this esteemed group was that we should move ahead with our mission: developing the PhD and contributing our knowledge to other disciplines. Both of the deans of the College of Letters, Arts and Sciences — Irwin "Chet" Leib, a philosopher, and Paul Bohannon, an anthropologist — got the potential value of occupational science to the university from the very beginning.

The department's vision realized

The departmental context was one of excitement, deliberation and urgency to contribute new knowledge through our research. We wanted to study the occupational human and the relationship between engagement in occupation and health; to restore occupation as central to occupational therapy; and to support the new doctoral program and secure our place within the university.

Our master's students urged us to develop the PhD curriculum because there was so much more to learn about occupation than could possibly be transmitted at the Master of Arts level. We anticipated that our research, organized into a systems model, would be integrated into the curriculum at all levels, providing practitioners with the new knowledge they needed to support their work.

We were adamant that the research methods we employed neither demeaned nor diminished the people we studied, but reflected humanistic values and emphasized people's experiences and satisfaction with engagement in occupation. Thus, sometimes we needed to employ creative new research approaches. We also wanted to understand much more about the developmental trajectory by which people develop competence. Consequently, our research needed to encompass the entire lifespan — what a challenge!

The PhD proposal completed in 1987 resulted from the sustained efforts of our faculty consisting of Professor Emeritus Florence Clark; Professor Emeritus Ruth Zemke;

(Continued on page 22)



AT THE 2019 USC CHAN OCCUPATIONAL SCIENCE SYMPOSIUM, MORE THAN TWO DOZEN ALUMNI OF THE PHD IN OCCUPATIONAL SCIENCE PROGRAM GATHERED TO CELEBRATE THREE DECADES OF THE DISCIPLINE, INCLUDING (BACK ROW, LEFT TO RIGHT): ERIC ASABA, DON GORDON, JULIE MCLAUGHLIN GRAY, CHRISTY BILLOCK, MELISSA PARK, LINDA FLOREY, JOHN WHITE, ERNA BLANCHE, SUSAN KNOX, SUSAN SPITZER,



September 19, 2019, was a day literally 30 years in the making. At the 2019 USC Occupational Science Symposium, more than 150 scholars, educators, clinicians and alumni came to campus to commemorate the 1989 founding of the world's first PhD in occupational science degree program, and to mobilize for what might lie ahead.

It was also, in another sense, a day nearly one year in the making. A team including Associate Clinical Professor Rebecca Aldrich '05, MA '06, staff member Jeanine Blanchard MA '99, PhD '10, and students Catherine Shin MA '19, OTD '20 and Natasha Strickland MA '18, OTD '19 planned the symposium throughout 2019.



The event opened with remarks by a distinguished panel of occupational science's founders — Professors Emeriti Florence Clark PhD '82; Elizabeth Yerxa '52, MA '53; and Ruth Zemke — moderated by Janice Burke MA '75, co-founder of the Model of Human Occupation. All four were named to the American Occupational Therapy Association's 2017 list of the 100 most influential people in the all-time history of occupational therapy. The panel recounted the formative years of the discipline, transporting the audience back to Rancho Los Amigos National Rehabilitation Hospital, where the educational program



was located from 1972 to 1988 and the USC Graduate School in the 1980s.

Associate Chair of Research and Professor Mary Lawlor then spoke about applying a narrative approach for telling the discipline's unifying story, and Associate Dean and Chair Grace Baranek discussed occupational science through the lens of meliorism: the metaphysical belief that humans, through their actions in and upon the world, have the capacity to make life better for individuals, groups and societies.

Six USC Chan faculty members gave conference-style research briefs about their current projects, a panel featuring USC alumni



MEGAN C. CHANG, THOMAS MERNAR, ALISON COGAN, BETH PYATAK, MARK HARDISON; (FRONT ROW, LEFT TO RIGHT): AMBER ANGELL, JIN-LING LO, YAN-HUA HUANG, ETSUKO ODAWARA, BONNIE KENNEDY, SHEAMA KRISHNAGIRI, PHYLLIS MELTZER, POLLIE PRICE AND JEANINE BLANCHARD. PHOTOS BY GLENN MARZANO



who hold faculty appointments at international institutions in Canada, Japan, Sweden and Taiwan discussed the discipline's global developments and three participatory breakout sessions explored translational applications of occupational science to clinical, educational and social contexts.

Clare Hocking (pictured above), professor at New Zealand's Auckland University of Technology, delivered the honorary Wilma West Lecture titled "Occupation in Context: A Reflection on Environmental Influences on Human Doing." Hocking's scholarship focuses on occupational justice and occupation



for population health, and her current research includes identifying strategies that people with health conditions use to manage participation in everyday occupations at home and in the community.

Thomas Valente (pictured above), professor and interim chair of Preventive Medicine at the Keck School of Medicine of USC, gave the keynote lecture on "Social Networks and the Spread of New Ideas and Practices." Valente uses social network analysis, health communication and mathematical models to implement and evaluate health promotion programs. The day



closed with a screening of "30 Years of USC Occupational Science," a documentary-style video now available on YouTube, and a hosted reception at the USC Center for Occupation and Lifestyle Redesign along with tours of the newly opened USC Chan Archive.

Three decades ago, the symposium was imagined as being the division's marquee academic and networking event to foster the growth of the fledgling new discipline. As occupational science enters its fourth decade, the USC Chan OS Symposium continues carrying that legacy forward for the next generation.

Diane Parham MA '81 who coordinated the development of the proposal; Professor Gelya Frank; Doris Pierce MA '88, PhD '96; Carol Stein '81, MA '84 and Jeanne Jackson MA '86, PhD '95. To introduce it, we co-authored a paper, "An Introduction to Occupational Science, a Foundation for Occupational Therapy in the 21st Century," published in a special issue of *Occupational Therapy in Health Care* devoted entirely to occupational science. The issue's "Foreward" was written by psychologist Mihaly Csikszentmihalyi, a consultant and an enthusiastic supporter of our efforts.

In the earlier, formative years of our thinking, Jerry Sharrott MA '80, Bob Wolf (an anthropologist), Linda Davis and Doris Hill MA '69, who connected us to Mary Reilly's work, made substantial contributions. Many of our master's students' theses centered upon occupation, fitting within individual faculty member's research programs. Our clinical faculty contributed substantially via thesis research and consultation. Janice Matsutsuyu MA '68; USC Chan Board of Councilors Chairperson Linda Florey MA '68, PhD '98; Janice Burke MA '75 and the occupational therapists at Rancho Los Amigos Hospital were particularly supportive. Stan Azen, a biostatistician, was central to our research efforts. He was open to the complexity of occupation and found valid, creative ways for us to operationalize key concepts!

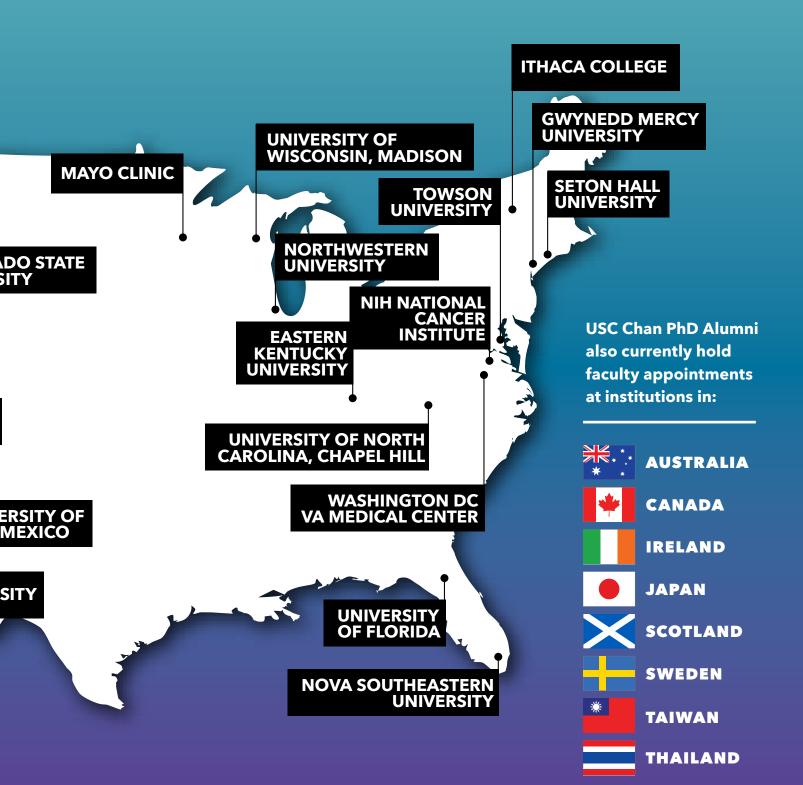
A related effort was seeking to relocate the department to a more visible and intellectually appropriate setting. Echoing the founders and reflecting the content and values of our basic science, we sought to become part of the College of Letters, Arts and Sciences and to relocate to the USC University Park Campus. With the encouragement of the dean of LAS and the LAS department chairs, we explored several possible locations there. However, in early 1988, the provost of the university made such a move impossible. Shortly thereafter, I retired from my position, having seen the initial version of the PhD proposal submitted and approved by the relevant department chairs and administrators.

I am extremely indebted to those who came before us at USC, those audacious colleagues who believed in and worked diligently to create occupational science, and those — especially Drs. Clark and Zemke — who implemented it so successfully. Dr. Florence Clark's courageous, energetic and steadfast leadership, and Dr. Ruth Zemke's lucid, grounded interpretation, enabled our vision to be realized as it is in the world today: occupational science, not as a science of pathology, but as a science of hope.

USC CHAN PHD ALUN PURPOSE AT THESE I



INI ARE ADVANCING OUR SHARED NSTITUTIONS NATIONWIDE.





CLASS NOW IN SESSION AS CHINA INITIATIVE PARTNERSHIP WELCOMES INAUGURAL STUDENTS

USC curriculum and alumni to educate the first cohort of dual-degree occupational therapy students at Peking University Health Sciences Center.

BY MIKE McNULTY '06, MA '09, OTD '10

In September, leaders from USC Chan joined alongside their counterparts at Peking University Health Sciences Center (PUHSC) to welcome the first class of students enrolled in the universities' new dual-degree program in occupational therapy. With addresses from faculty and student representatives, ribbon cutting and white coat ceremonies and a customary break for morning tea, the program that will train a new generation of Chinese occupational therapists is now officially underway.

"It's almost like a dream come true," said Zhou Mouwang, PUHSC professor of rehabilitation medicine and the director of the rehabilitation medicine department at Peking University Third Hospital. "This program increases the educational level of OT in China from bachelor to doctorate, which is a remarkable milestone to the profession and the history of rehabilitation medicine."

That milestone has been nearly three years in the making.

In 2016, USC and PUHSC — both members of the Association of Pacific Rim Universities — announced a partnership to open one of China's first graduate programs specializing in occupational therapy. Those plans were set in motion two years earlier, in 2014, thanks to the multimillion dollar gift from USC Trustee Ronnie C. Chan MBA '76

and his wife, Barbara. A portion of the Chan gift was earmarked for establishing a new partnership with an elite Chinese university in order to expand occupational therapy research, education and practice in the nation of 1.3 billion people.

During the past three years, delegates from both institutions have been working together to adapt USC Chan's master's-level curriculum, recruit potential Chinese students and disseminate best practices and knowledge at various conferences throughout Asia. The faculty members leading the young program at PUHSC, considered among China's most prestigious higher education institutions, are also Trojans themselves.

"I am very honored to be part of this important collaboration, and excited to celebrate the culmination of more than three years of collaborative work," said Julie McLaughlin Gray, USC Chan's associate chair for curriculum and faculty and the director of the China Initiative. "I have every confidence this will make a significant contribution to the development of OT in China, and ultimately, the occupations and health of the Chinese people."

Occupational therapy as understood in Chinese educational and health care contexts historically falls under a generic "rehabilitation therapy" label. Therefore, students in the USC–PUHSC dual-degree program will take two years of courses at PUHSC to earn a master's degree in rehabilitation therapy. They will then attend USC's one-year, post-professional doctorate of occupational therapy (OTD) program in Los Angeles. By the fall of 2022, the first dual-degree graduates will begin nurturing the profession throughout mainland China.

The program promises to continue the educational evolution of occupational therapy in China by ultimately building a workforce capable of providing high-quality clinical services to the estimated 85 million Chinese living with, or at risk for, a disability.

"OT treats every patient with true heart, starts from all aspects of the body and mind, and leads patients to find the meaning of life in the most common way," said Chen Gong OTD '22, one of the six students in the inaugural class. "We are very lucky to be admitted to this program so that we can engage in the cause that is truly beneficial to the people of China."

Thank You

ALUMNI. FRIENDS AND SUPPORTERS

Our sincere thanks to the **876 generous donors** who supported the USC Mrs. T.H. Chan Division of Occupational Science and Occupational Therapy during the historic Campaign for the University of Southern California, which began in July 2010.

Your participation in the largest successful fundraising campaign in occupational therapy education history helped to accomplish many amazing things, including:



We educated more than 1,000 graduate students, many of whom will go on to serve in key leadership roles, driving the profession forward.



We secured 34 new research grants, allowing USC Chan researchers to contribute to our profession's growing body of knowledge.



We became the USC Chan Division of Occupational Science and Occupational Therapy, thanks to a historic \$20 million gift from USC Trustee Ronnie C. Chan and his wife, Barbara.



We provided occupational therapy interventions for 48,854 patients across all 10 of our clinical sites of service.



We expanded occupational therapy's worldwide reach with new global programs, including our China Initiative and Summer Occupational Therapy Immersion.



We recruited 15 new full-time faculty members who provide occupational therapy clinical services, educate students and conduct groundbreaking research.

Your generosity has ensured that USC Chan remains one of the premier occupational therapy education institutions by advancing transformative and translational research, hands-on clinical instruction and top-tier patient care. Thank you.

In Print

The imaging and imagining of A. Jean Ayres

What contemporary neuroscience has to say about Ayres Sensory Integration

It's an understatement to say that much has changed in the field of neuroscience during the 40-plus years since the late A. Jean Ayres '45, MA '54 began studying the sensory experiences of her pediatric patients with neurodevelopmental disorders. During the 1960s and '70s, she conceptualized an intervention approach now referred to as Ayres Sensory Integration (ASI) for treating the sensorimotor foundations of higher-order behaviors and skills that can help or hinder children's participation in everyday activities.

Ayres' theoretical framework was based on neurological knowledge available at the time. When she was developing her explanations and interventions, many of the technologies used today for studying brain structure and function were not yet widely available. For instance, the first magnetic resonance images (MRI) of humans were only published in 1977. Today we take MRIs for granted. In Ayres' time, autism spectrum disorder was considered a rare neurodevelopmental disorder. Its current incidence is estimated at 1 in 59 children in the United States, and the body of ASD research has grown exponentially.

In their article, "Ayres Theories of Autism and Sensory Integration Revisited: What Contemporary Neuroscience Has to Say," recently published in *brain sciences*, postdoctoral scholar **Emily Kilroy** PhD '18, Associate Professor **Lisa Aziz-Zadeh** and Professor **Sharon Cermak** surveyed the literature on neurophysiological responses to sensory stimuli in people with ASD, as well as on structural and network organization using a variety of neuroimaging techniques.

With the benefits of hindsight, technologies and methodologies, the authors examined the consistency of current neuroscience data against Ayres' theories of ASD. The authors reviewed three aspects of sensory processing deficits in ASD—registration, modulation and motivation—which Ayres



discussed in her book, *Sensory Integration and the Child*, and assessed the extent to which current neuroimaging research on sensory processing and sensory integration in ASD supports Ayres' hypotheses.

The authors concluded that "Ayres' predictions about sensory registration, modulation and motivation are strongly supported by the findings of various studies" (p. 12). Yet with that support comes a caveat: very little research has linked ASD neurosignatures to therapeutic outcomes. The authors strongly advocate for future research to better understand that relationship between the abnormalities in ASD and the therapeutic intervention approaches to enhance sensory symptoms and promote more participation in meaningful daily activities.

Nobody can predict the neuroimaging technologies that will be invented in the next 40 years. But what we can be sure of is the ongoing commitment of occupational therapists — past, present and future — to use the best available evidence for structuring therapeutic interventions that can improve peoples' everyday quality of life.

"Ayres Theories of Autism and Sensory Integration Revisited: What Contemporary Neuroscience Has to Say" (Kilroy, Aziz-Zadeh, & Cermak, 2019) is available (open access, full-text) at doi.org/10.3390/brainsci9030068

-Mike McNulty '06, MA '09, OTD '10

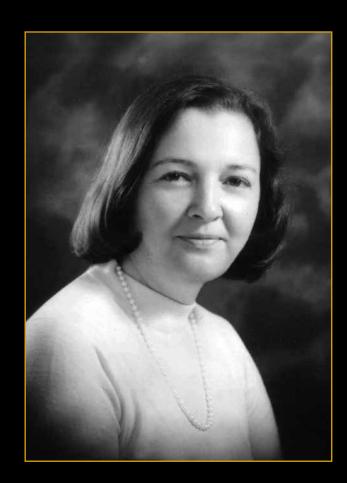
CLAUDIA ALLEN

Claudia Allen, former USC faculty member and renowned occupational therapist, died in Glendora, Calif., in February 2019.

Allen was most widely known for the Cognitive Disabilities Model, which has been used for more than four decades by occupational therapists with clients experiencing cognitive deficits. Beginning in the 1960s, she and her colleagues developed the model as a way of interpreting a person's functional cognition through the observation of their skills. The eponymous Allen Cognitive Levels, based upon the Cognitive Disabilities Model, is a six-tier hierarchical model of a client's cognitive abilities as interpreted through observable patterns and behaviors during the performance of activities.

Allen arrived at LAC+USC Medical Center in 1973, and served as chief of occupational therapy services in the LAC+USC Department of Psychiatry for more than two decades. She was affiliated with USC's occupational therapy faculty for more than 25 years, beginning as a guest lecturer in 1974, until her retirement as an instructor of clinical occupational therapy in 1999.

Allen was a member of the inaugural cohort named to the American Occupational Therapy Association's roster of fellows in 1973. In 1987, she earned the association's highest scholastic honor, the Eleanor Clarke Slagle Lecture, which she titled "Activity: Occupational Therapy's Treatment Method."



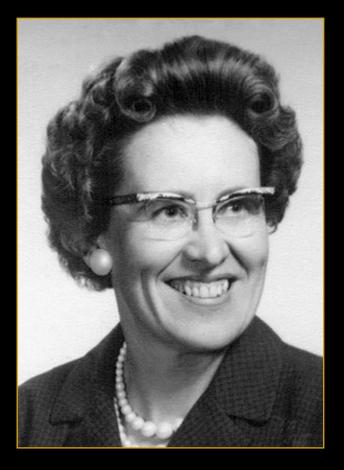
DORIS HILL

Doris Hill Cert. '68, MA '69, former USC faculty member and longtime supporter, died in February 2019.

An Oregon native, Hill joined the faculty of the USC Department of Occupational Therapy in 1969, after completing her master's thesis titled "Changing Educational Patterns in Occupational Therapy with Emphases on Media Skills: 1948-1968."

For nearly two decades, Hill taught the department's undergraduate and graduate "Skills and Theory" courses on the therapeutic use of art and crafts media in clinical practice. During the 1980s, she also served as the department's fieldwork coordinator, arranging educational placements for USC students in hospitals throughout California, Oregon, Washington and Arizona.

Hill was named to the American Occupational Therapy Association's roster of fellows in 1986. She was an associate professor of clinical occupational therapy at the time of her 1987 retirement. As befitting a skilled craftsperson, her USC retirement dinner featured a turtle carving contest. At the department's 1998 Heritage Dinner, Hill was honored for a "lifetime of caring, two decades with USC," and she remained a close friend of the division throughout her later years.



Sharon Cermak was a co-author of "Somatosensory Discrimination in People with Autism Spectrum Disorder: A Scoping Review" in the *American Journal of Occupational Therapy*. Cermak also co-authored "Update of a Meta-Analysis of Sensory Symptoms in ASD: A New Decade of Research" in the *Journal of Autism and Developmental Disorders*.

Leah Stein Duker and Sharon Cermak were co-authors of "The Persistence of Oral Health Disparities for African American Children: A Scoping Review" in the International Journal of Environmental Research and Public Health. PhD student Dominique Como MA '16, PhD '21 was the article's lead author. Como, Stein Duker and Cermak also co-authored "Examining Unconscious Bias Embedded in Provider Language Regarding Children with Autism" in Nursing & Health Sciences. Alumnae Lucía Floríndez PhD '19 and Christine Tran MA '16, OTD '17 were co-authors.

Sook-Lei Liew was a co-author of "The LONI QC System: A semi-Automated, Web-Based and Freely-Available Environment for the Comprehensive Quality Control of Neuroimaging Data" in Frontiers in Neuroinformatics. Liew was also a co-author of "Stroke Atlas of the Brain: Voxel-Wise Density-Based Clustering of Infarct Lesions Topographic Distribution" in NeuroImage: Clinical. Liew and doctoral student Kaori Ito MA '16, PhD '21 were co-authors of "A Comparison of Automated Lesion Segmentation Approaches for Chronic Stroke T1-Weighted MRI Data" in Human Brain Mapping. Liew co-authored "Effects of a Brain-Computer Interface with Virtual Reality (VR) Neurofeedback: A Pilot Study in Chronic Stroke Patients" in Frontiers in Human Neuroscience, and alumna Meghan Neureither MA '18, OTD '19, and students David Saldana MA '19, OTD '20 and Esther Jahng MA '20 were co-authors. Liew, Saldana and Jennifer Chan MA '18, OTD '19 were co-authors of "Mindfulness Meditation Effects on Poststroke Spasticity: A Feasibility Study" in the Journal of Evidence-Based Integrative Medicine.

Deborah Pitts authored "The Home Environment: Permanent Supportive Housing," in *Occupational Therapy in Mental Health: A Vision for Participation* (2nd edition) published by F. A. Davis. Pitts was also a co-author of "Examining Fall Risk among Formerly Homeless Older Adults Living in Permanent Supportive Housing" in *Health and Social Care in the Community*, and of "Geriatric Conditions among Formerly Homeless Older Adults Living in Permanent Supportive Housing" in the *Journal of General Internal Medicine*.

Beth Pyatak co-authored "Home Telemedicine (CoYoT1 Clinic): A Novel Approach to Improve Psychosocial Outcomes in Young Adults with Diabetes" in *The Diabetes Educator*. Pyatak and **Sharon Cermak** were

co-authors of "Oral Care Experiences of Latino Parents/Caregivers with Children with Autism and with Typically Developing Children" in the *International Journal of Environmental Research and Public Health*. Alumna **Lucía Floríndez** PhD '19 and doctoral student **Dominique Como** MA '16, PhD '21 were also co-authors.

Faculty members Beth Pyatak, Cheryl Vigen, Jesús Díaz, Stacey Schepens Niemiec and Katie Jordan; staff members Elia Salazar and Jeanine Blanchard; and alumna Maggie King '16, MA '17, OTD '18 co-authored "Addressing Diabetes in Primary Care: Hybrid Effectiveness—Implementation Study of Lifestyle Redesign" Occupational Therapy" in the American Journal of Occupational Therapy. Pyatak, Vigen, Schepens Niemiec, Blanchard, Michael Carlson, John Sideris and Grace Baranek co-authored "Contextualizing the Positive Effects of the Well Elderly 2 Trial: A Response to Schelly and Ohl" in the American Journal of Occupational Therapy.

Samia Rafeedie and staff member Jane Baumgarten co-authored "Kinesiology Concepts" in *Kinesiology for Occupational Therapy* (3rd edition) published by Slack Incorporated. Rafeedie was also a co-author of "Addition of Occupational Therapy to an Interdisciplinary Concussion Clinic Improves Identification of Functional Impairments" in the *Journal of Head Trauma Rehabilitation*. Alumna Madison Harris '16, MA '17, OTD '18 was the article's lead author.

Shawn Roll was the lead author of "Prevention and Rehabilitation of Musculoskeletal Disorders in Oral Health Care Professionals: A Systematic Review" in *The Journal of the American Dental Association*. Co-authors included postdoctoral researcher Kryztopher Tung, alumnae Heng Hannah Chang MA '17, OTD '18 and Tina Sehremelis '15, MA '16, OTD '17 and students Yoko Fukumura MA '19, PhD '24 and Samantha Randolph '20, MA '21. Roll also co-authored "Participants' Perceptions of Kinesio Tape for Carpal Tunnel Syndrome: A Qualitative Study" in *Hand Therapy*, and "Smart Desks to Promote Comfort, Health and Productivity in Offices: A Vision for Future Workplaces" in *Frontiers in Built Environment*.

Cheryl Vigen and Grace Baranek co-authored "The Performance of the First Year Inventory (FYI) Screening on a Sample of High-Risk 12-Month-Olds Diagnosed with Autism Spectrum Disorder (ASD) at 36 Months" in the Journal of Autism and Developmental Disorders. Postdoctoral scholar Helen Lee was the article's lead author.



CLASS NOTES

Megan Chang MA '01, PhD '09 has been selected as a 2020 inductee to the American Occupational Therapy Association's Roster of Fellows. Chang is currently a faculty member at San Jose State University's Department of Occupational Therapy.

Susan Forwell MA '89, PhD '05 was awarded the Muriel Driver Memorial Lectureship Award by the Conference of the Canadian Association of Occupational Therapists. Forwell currently heads the Department of

Occupational Science & Occupational Therapy at the University of British Columbia, in Vancouver.

Carol Haywood PhD '18 received the 2019 Nedra Gillette Research Fellowship from the American Occupational Therapy Foundation. Haywood is a postdoctoral fellow in health services and outcomes research at Northwestern University in Chicago.

Abbey Marterella PhD '10 was named president of the Center for Innovative OT Solutions, a Colorado-based clinical resource center, which is most widely known for publishing the Assessment of Motor and Process Skills (AMPS).

Carol Ann Miller '61, MA '62 died in October 2019. She was 80. Miller resided in Foster City, Calif., for more than 30 years, and practiced as an occupational therapist in Daly City, Calif., before she retired to Auburn, Wash.

A DEEPER MEANING

Newly appointed **Post-Professional Program Director Emily Ochi reflects** on the power of narratives throughout her occupational therapy career.

BY EMILY OCHI MA '12, OTD '13, DIRECTOR OF THE POST-PROFESSIONAL MASTER'S PROGRAM AND ASSISTANT PROFESSOR OF **CLINICAL OCCUPATIONAL THERAPY**

I began to understand the value of stories during my first year in the entry-level master's in occupational therapy degree program at USC Chan. I was working as a research assistant transcribing qualitative interview data in Associate Chair and Professor Mary Lawlor's Boundary Crossings: Re-Situating Cultural Competence research lab. As I listened to hours of interviews from study participants - sharing their stories on their terms about life as African American families with a child with illness or disabilities — I started to appreciate the power of narrative to help us understand those with whom we work.

My nephew Jackson's story is one that was never to be expected. Jackson was born in August 2014 with a rare, unspecified neuromuscular disorder that impacts all aspects of his life. He breathes through a tracheostomy, uses a wheelchair for mobility, eats via a feeding tube and communicates using an augmentative and alternative communication device. Despite these differences, Jackson lives a very occupationally enriching life. He attends kindergarten, has a knack for remembering the smallest details and is incredibly determined to do things his way. His favorite occupations are riding his modified tricycle along the beach, going grocery shopping with his parents and making sure that his aunt follows all of the rules whenever I play board games with him!

I often reflect on Jackson's story when working with local museums to foster inclusive experiences for their visitors. For the past four years, I have taught a course in which USC Chan occupational therapy students facilitate



a series of field trips to a local science museum for a class of students on the autism spectrum. Through this collaboration, I've had the opportunity to provide accessibility trainings for staff members at a few different museums. The primary goal of these trainings is to build a more inclusive community, prepared to meet the needs of people of all abilities across the lifespan. In occupational therapy, we understand the central role that community participation plays in a person's sense of self and identity, and we draw on this knowledge to create spaces and places that are welcoming to families with diverse needs and experiences. Understanding the stories of those with whom I work is a central tenet to every aspect of my work in occupational therapy.

Given this core belief, it's no surprise that I have already seen the impact of stories in

my new role as program director for the postprofessional master's in occupational therapy degree program. Our students come from across the globe to study at USC. This diversity brings incredible depth to the curriculum as students offer, and gain, international perspectives on occupational therapy. This heterogeneity also brings challenges as students struggle to understand the nuances of occupational therapy practice in the U.S. and abroad. In these cases, students often find that stories are the most effective tool to bridge cultural gaps.

Occupational therapy has provided me with opportunities that I never envisioned. I am so appreciative of the perspective that this profession has provided me, and I am excited to continue learning from, and helping to shape, the occupational narratives of my family, colleagues and students.

USC Chan Division of Occupational Science and Occupational Therapy

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