

USC Chan

SPRING 2019

MAGAZINE

18M
DOLLARS

**\$18 million in active, federally
funded research grants **P.17****

COVER GIRLS | *Willard and Spackman's Occupational Therapy* has been called “the OT Bible” and “the book that captured a profession.” The newly released edition of the iconic text captured something else on its cover: USC Chan faculty members Karen Park MA '02, OTD '13, pictured at left, and Samia Rafeedie MA '05, OTD '06, right.

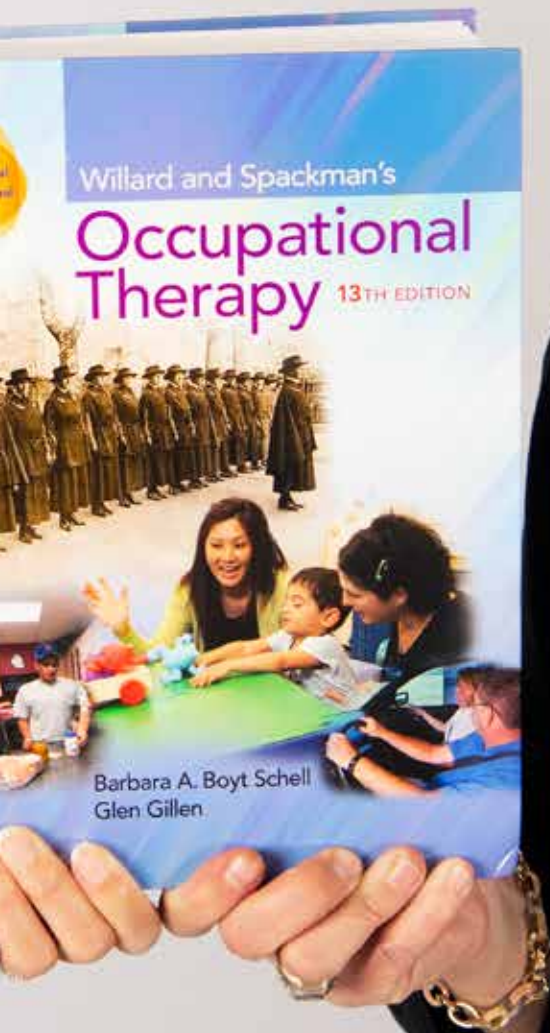
“It was a complete surprise,” laughs Rafeedie, director of USC Chan’s professional master’s-level program and an associate clinical professor. “I was checking out my Facebook feed and saw a post by [*Willard and Spackman* editor] Glen Gillen, and he said, ‘The newest *Willard and Spackman* book is coming soon!’ And I saw the new cover and started jumping up and down!”

“My first reaction was thinking, ‘I’ve arrived, I’ve finally arrived!’” says Park, the division’s academic coordinator of pediatric fieldwork education and assistant clinical professor. “I can now add cover model to my CV!”

The textbook, now in its 13th edition, began publication in 1947 and has been used by generations of occupational therapy students and practitioners. According to the National Board for Certification in Occupational Therapy, as of 2016, *Willard and Spackman* is a required textbook at 76 percent of the nation’s occupational therapy educational programs, including USC Chan.

“It’s history, and it’s precious,” Rafeedie says. “It has always been a staple in the profession.”





Dear Alumni and Friends,

In 1994, the first USC occupational scientist received a federally funded research grant. Together, \$810,000 from the NIH National Institute on Aging, the Agency for Healthcare Research and Quality and the NIH National Institute of Child Health & Human Development made possible the USC Well Elderly Study led by PI Florence Clark PhD '82 — a truly transformative accomplishment.

Just last month, 25 years later, an influx of new grants pushed the current amount of total federal research funds actively managed by USC Chan to more than \$18 million!

This issue of the *USC Chan Magazine* highlights three of our faculty's new federally funded research projects that helped push us into the double-digit millions. From using MRI scans to better understand the sensory experiences of children exposed to alcohol in utero to engineering intelligent workstations for improving workers' well-being to exploring the role of gut bacteria on the neurodevelopment of children with ASD, USC occupational scientists are tackling relevant issues with rigorous approaches.

Of course, level of funding is but one measure of a project's importance. Yet the impressive sum shows just how far USC Chan's research capacity has come in the span of a single generation. It's a testament to the skill and expertise of our outstanding occupational scientists, their support teams, collaborators and the grant infrastructure that helps make it all possible. Most importantly, it demonstrates the highest aspirations of occupational therapy and occupational science research to continue to make real impacts on real peoples' health and quality of life.

Reaching \$18 million in federal grant funding is a stunning accomplishment. It is also a product of USC Chan's longstanding record of ingenuity, ambition and determination. For 25 years, our research enterprise has had the great fortune of standing on the shoulders of the giants who preceded us, and for that we are forever grateful. And yet, in some ways, I can't help but think that we are only getting started. 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**
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AVISHAI SADAN MBA '14

**DIRECTOR OF EXTERNAL
RELATIONS**
MIKE McNULTY '06,
MA '09, OTD '10

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**USC University of
Southern California**

FEATURE STORY

JULIE MCLAUGHLIN GRAY'S "OCCUPATION AS ENDS, OCCUPATION AS MEANS" TURNS 20 | P. 14

As her influential *American Journal of Occupational Therapy* article turns 20 years old, McLaughlin Gray reflects on its origins, impact and legacy, not just for the profession, but also for herself.



PHOTO BY HANNAH BENET

FEATURES

OCCUPATIONAL THERAPY AND LOS ANGELES' HOMELESS | P. 12

The number of people experiencing homelessness in Los Angeles County has risen more than 40 percent during the past decade. In the face of what many experts call an ongoing crisis, USC Chan faculty, students and alumni are ensuring occupational therapy is part of comprehensive care for the homeless.

REMEMBERING WAYNE HINTHORN | P. 27

The Trojan engineer, husband, philanthropist and USC Chan Board of Councilors member died at 90.

DEPARTMENTS

NEWS: BRINGING AOTA'S SPECIALTY CONFERENCE TO CAMPUS | P. 5

NEWS: STRATEGIC PLAN FY 2019-23 FINALIZED | P. 10

UP FRONT | P. 6

Korean alumnus heads to the United Nations; NICU expert receives Buehler Award; USC marks 500th OTD grad; Cutting the ribbon on new USC Chan Archive; Faculty named Forbes Fellow; Hosting new VR tech symposium; Students practice 21 days of kindness; Table detailing \$18M of federal funds; Video shows faculty member's literal lifeguard duties.

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5 THINGS TO KNOW ABOUT: REBECCA ALDRICH | P. 13

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A DEEPER MEANING: JOHN MARGETIS | P. 28

DOUBLE DIGITS | P. 17

As of early 2019, USC Chan faculty researchers together hold \$18 million in active, federally funded research grants, an unprecedented figure both at USC Chan and within the landscape of occupational science and occupational therapy. On p. 17, learn about three exciting new research studies that have brought USC Chan's federal grant total into the double digit millions.

CONTRIBUTORS



**Evan Nicholas
MA '19**

Writer, On
Its 20th
Anniversary,
"Occupation
as Ends,

Occupation as Means" As Relevant
As Ever, p. 14

On pursuing a career in OT: Since 2005, I have resided in Santa Monica, Calif., working in the motion picture industry. I got married and was becoming increasingly interested in a career change to a profession that included a component of service.

Meaningful occupations: Hiking, playing the piano and unstructured play with my 2-year-old son.

About writing the article: My favorite part was getting the opportunity to spend some time alone with Dr. McLaughlin Gray, and coming to more deeply understand "ends and means" as a dynamic piece of literature that's really full of optimism.



**Jamie
Wetherbe MA
'04**

Writer,
Designing
Tomorrow's
Workstation,

Today, p. 20

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

Meaningful occupations: My son, Kingston.

About writing on workstations of the future: As someone who spends much of the day in front of a computer, it was fascinating to learn how work environments could actually improve our health.



**Katharine
Gammon**
Writer, Health
Care for the
Homeless,
p. 12; New
Study Probes

the Sensory Effects of Prenatal
Alcohol Exposure, p. 18

Work has appeared in: *Scientific American*, *WIRED*, *Discover*, *Popular Science*, *Esquire*

Meaningful occupations:

Learning about constellations with my two young astronomy-loving sons, spending summers on boats and riding horses.

About writing on the sensory effects of prenatal alcohol exposure: I found it fascinating to learn how interventions — like learning to juggle — can slightly change white matter in the brain. For kids struggling cognitively or behaviorally because of prenatal exposure to alcohol, it's encouraging that evidence-based interventions can make a real impact.



**Trevor San
Antonio MA '20**
Interviewer,
GenNext, p. 24
**On pursuing
a career in
OT:** I chose

OT because I wanted to help individuals see the value in their occupations and get them back to doing what they love most.

Meaningful occupations:

Art, design, watching movies, traveling, hiking, going to music festivals and trying new food places.

About writing GenNext: One of the things I love to do is listen to people's stories. The chapters in María Cristina's life story told me what a warmhearted and hard-working individual she is, and will continue to be in the field.



PHOTOS BY GLENN MARZANO

CONFERENCE COMES TO CAMPUS

AOTA teams up with USC for first-ever Adult Rehabilitation Specialty Conference.

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

In late 2018, USC hosted the American Occupational Therapy Association's Specialty Conference on Adult Rehabilitation at the USC University Park Campus. For two days, more than one dozen of USC Chan's faculty experts in neurorehabilitation and hand therapy shared their expertise with colleagues, attendees and exhibitors. The event was AOTA's first specialty conference focused on adult rehab topics. In contrast to AOTA's annual conference, specialty conferences offer in-depth learning opportunities for more seasoned and specialized providers.

"The specialty conference format allows for a convergence of research and advanced practice in ways that can accelerate learning, collaboration and clinical practice," said Associate Chair Katie Jordan MA '03, OTD '04, the conference committee co-chair along with Associate Professor Shawn Roll.

The conference opened with a keynote panel, moderated by Associate Dean and Chair Grace Baranek, of faculty members discussing the creation of synergies between clinicians and researchers in pursuit of knowledge mobilization. As Baranek explained, knowledge mobilization is a distinct concept from the oft-heard term knowledge translation.

"As an alternative to 'translation,' the term 'mobilization' accounts for the oftentimes messy complexities and contingencies of clinical practice," Baranek said. "The movement of knowledge into action is much more complex than 'from bench to bedside.' Knowledge mobilization offers an alternative framing that embraces synergies between researchers, clinicians and the clients they serve — it aims to change practice and policy."

USC Chan is the only occupational therapy educational program in the nation whose full-time faculty includes practitioners at a high-acuity academic medical center. Such breadth and depth of expertise can be leveraged to improve occupational therapy opportunities nationwide.



"The biggest take-home message is that we are stronger together," Jordan said. "By sharing ideas, discussing challenging concepts and coming together to advance practice, it benefits not just practitioners but the consumers who we serve."

AOTA President Amy Lamb and AOTA President-Elect Wendy Hildenbrand were both in attendance and participated in educational sessions. Contributions from AOTA staffers, as well as from members of the American Society of Hand Therapists, were also instrumental in the conference's success.

UNITING NATIONS THROUGH OCCUPATIONAL THERAPY

Seung Woo “Benedict” Hwangbo OTD ’18 represented USC Chan at the 2018 meeting of College Leaders at the UN: Korea at its New York City headquarters. The program, which is sponsored by the World Federation of United Nations Associations, is designed to introduce the UN’s latest agenda items, namely its Sustainable Development Goals (SDGs). The SDGs purport to serve as a blueprint for achieving a more sustainable future in the year 2030 by addressing global challenges related to poverty, inequality, peace and justice.

Hwangbo was one of 25 Korean students chosen from 15 American and Korean college institutions. The students were tasked to work on specific topics related to the SDGs. At the end of the program, Hwangbo and his team presented their feasible “calls to action” for combating human trafficking to UN staff members. Among their calls to action is increasing the visibility of holistic rehabilitation systems and approaches, including occupational therapy interventions, for trafficked victims.

The attendees met Korean mission ambassador Cho Tae-Yul to discuss ongoing issues in Korea, and visited with the permanent missions of Switzerland and Guyana to learn more about those nation’s plans for achieving country-specific SDGs. Hwangbo is believed to be the first Korean occupational therapist to have attended any UN-sponsored program.

“OT knowledge, skills, approach and interventions could all contribute to achieving targeted goals by reducing and preventing global health problems and providing proper client-centered interventions to manage health problems occurring throughout the world,” Hwangbo said.



PHOTO COURTESY OF BENEDICT HWANGBO

UP
FRONT



NICU EXPERT VISIT

Bobbi Pineda, assistant professor of occupational therapy at the Washington University (St. Louis) School of Medicine, received USC Chan’s 2018 Patricia Buehler Legacy Award for Clinical Innovation.

Her award lecture, titled “Supporting and Enhancing NICU Sensory Experiences (SENSE) to Optimize Early Brain Development,” covered the clinical research that she has conducted in the neonatal intensive care setting for more than 10 years, including an evidence-driven, sensory-based intervention for parents to provide to their infants.

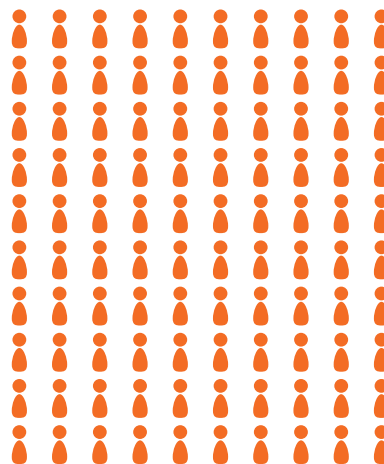
The award is named in honor of Patricia “Pat” Buehler ’49, and is designed to increase the visibility and applications of occupational science and occupational therapy by bringing experts to Los Angeles who can share their knowledge with USC faculty and students.

FORTUNE(ATE) 500

In Dec. 2018, USC Chan’s post-professional Doctorate of Occupational Therapy degree program reached a special milestone. Including this latest cohort, the program has graduated exactly 500 alumni since the first class received their OTD diplomas in 2002.

“Across many arenas, including athletics and business, 500 is a key indicator of success,” said Sarah Bream MA ’96, OTD ’09, director of USC’s OTD program. “For example, Fortune 500 companies or batting .500 in the major leagues. We are crossing over into a new level where we have a critical mass of Trojan Doctors of Occupational Therapy who will be the transformative leaders of our profession.”

● Represents 5 USC Chan post-professional Doctorate of Occupational Therapy degree program graduates.



ARCHIVE OFFICIALLY OPEN

More than two years in the making, the USC Chan Archive is now officially open. Located in the Center for Occupation and Lifestyle Redesign, the archive holds thousands of items of personal and professional significance. Examples include graduate student theses dating back to the 1940s, the program's earliest admissions pamphlets and the personal effects of occupational therapy luminaries such as Margaret Rood and Mary Reilly.

Historian Christine Peters and archivist Krystal Messer '04 were instrumental in making the archive a reality, as were the many volunteers and donors who generously contributed their time and materials.

"These collections contain the professional achievements of extraordinary women," Messer said. "But they also house cards, correspondence, photos and gifts from just some of the countless people these women touched. Because a life is so much more than a profession; and that's what we've tried to build here with these collections — a more complete and complex picture of their lives."

The USC Chan Archive is available for viewing by appointment. Selections will also be available online via USC Libraries in the near future.



PHOTO BY GLENN MARZANO



FORBES FELLOW FOR FACULTY

Assistant Clinical Professor Kristy Payne MA '16, OTD '17 was selected as a Forbes Fellow to attend the 2018 edition of the Forbes 30 Under 30 conference held in Boston. The summit brings together thought-leaders who are working to improve the world with innovative approaches to healthcare, education, policy and technology.

"As this generation seeks holistic and human-centered answers to complex social issues, it is important for occupational therapy to be part of the conversation," said Payne, who teaches Trojan undergraduates in USC Chan's occupational science minor program. "Participating in the summit has encouraged me to seek additional interdisciplinary platforms in which to share the unique value of occupational therapy."

PHOTO COURTESY OF KRISTY PAYNE

REAL LIFE MEET-UP FOR VIRTUAL TECH

At the inaugural USC Virtual Technologies for Health Symposium, more than 90 Trojans from across the university convened in real life for a day focused on virtual reality tech and its clinical applications for improving health, disability and rehabilitation. Projects demonstrated included multisensory feedback systems for people with Parkinson's disease relearning how to walk using VR environments; a platform for 3-D visualization — rather than the average 2-D computer screens in use today — for viewing neuroimaging data such as brain scans; and the “humans” used in clinical VR programs like those for assessing and treating military servicemember's post-traumatic stress disorder.

“People are doing truly exceptional work across so many areas of health — across pain management, motor rehabilitation, aging and cognition and more,” said Assistant Professor Sook-Lei Liew MA '08, PhD '12, who is co-appointed to the USC Division of Biokinesiology and Physical Therapy and is the co-director of the USC SensoriMotor Assessment and Rehabilitation Training in Virtual Reality Center. “The exciting thing is that we are all working hard on different facets of bringing VR into the clinic, and that gives us a lot of potential to create the best products across many areas.”



PHOTO BY GLENN MARZANO



NOT-SO-RANDOM ACTS OF KINDNESS

They say it takes 21 days to turn a given activity into an established daily habit. That's why the student-led OTSC Philanthropy/Community Service Committee recently hosted 21 Days of Kindness, a three-week initiative to purposefully perform acts that generate a spirit of community kindness.

All of USC Chan's student organizations joined in: Pi Theta Epsilon honor society hosted a thank-you note writing party; OTs for OuTreach distributed rainbow ribbons for community-building for LGBTQ students and allies; Integrative Health Association hosted a yoga session led by faculty member Camille Dieterle MA '07, OTD '08; Engage gave thank you cards to Facilities and IT staff members; and the OTSC Philanthropy Committee organized a tree planting. Kind On!

FEDERAL RESEARCH FUNDING

USC Chan faculty members first earned a federal research grant in 1994. Now 25 years later, in early 2019, the total amount of federal research dollars held by USC Chan has topped eight figures. The eye-popping \$18.18 million total comes from 10 federal agencies and currently supports 15 division studies. Read about three of the newest projects that have pushed USC Chan into the double digits beginning on p. 17.

A. NIH National Institute of Diabetes and Digestive and Kidney Diseases	\$6.69M
B. NIH National Institute of Dental and Craniofacial Research	\$3.68M
C. NIH National Institute of Child Health and Human Development	\$3.28M
D. NIH National Institute on Aging	\$0.84M
E. NIH National Institute on Alcohol Abuse and Alcoholism	\$0.35M
F. Centers for Disease Control: National Institutes of Occupational Safety and Health	\$2.32M
G. U.S. Department of Defense	\$0.51M
H. National Science Foundation	\$0.22M
I. U.S. Army Research Office	\$0.16M
J. U.S. Department of Education	\$0.03M



LIFEGUARD ON DUTY

When she's not in the classroom, USC Chan faculty member Myka Winder '07, MA '10, OTD '11 is keeping a watchful eye on SoCal's sunny beaches as a Los Angeles County Lifeguard.

“Adding in lifeguarding as an additional career, on top of being a professor, and then adding in being a mom after that, I feel like those three roles have really complemented each other,” Winder says.

She was recently featured in a L.A. County Lifeguard video available online at tinyurl.com/lifeguardmyka.

News Briefs



YOUR WORLD

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:



PITTS NAMED FELLOW, AMERICAN OCCUPATIONAL THERAPY ASSOCIATION

In 2019, Associate Professor of Clinical Occupational Therapy Deborah Pitts PhD '12 was inducted into AOTA's Roster of Fellows. The prestigious designation is meant to recognize one's knowledge, expertise, leadership, advocacy, guidance and significant contributions to occupational therapy. For more than four decades, Pitts has dedicated herself to building a more responsive and therapeutic practice, advancing scholarship and education and increasing the profession's presence and power in mental health policy and legislation. In 2011, she received OTAC's Practice Award and, in 2017, the OTAC Award of Excellence — both in recognition of her lifetime contributions to mental health practice. Pitts officially joins the Roster of Fellows at the 2019 AOTA Annual Conference in New Orleans.



BODISON, 2019 A. JEAN AYRES AWARD WINNER

Assistant Professor of Research Stefanie Bodison '92, MA '93, OTD '10, MS '17 has earned the 2019 A. Jean Ayres Award. The award recognizes individuals who are committed to the research-related development or testing of occupational therapy theory, with priority given to work in the sensory processing area. During her 25-year career, Bodison has become one of the profession's leading experts in sensorimotor and neurodevelopmental interventions for children with autism and other neurodevelopmental disorders. Past Trojans to earn the Ayres Award include Associate Dean and Chair Grace Baranek, Professor Sharon Cermak, Distinguished Emeritus Professor Elizabeth Yerxa OT CERT '52, MS '53 and Trojan alumnus Gary Kielhofner MA '75, PhD '80.



BARANEK APPOINTED MRS. T.H. CHAN PROFESSOR

Associate Dean and Chair Grace Baranek has been formally appointed into the Mrs. T.H. Chan Professorship in Occupational Science and Occupational Therapy. One of the highest awards a university can bestow, a professorship is meant to recognize both distinction in a field of study as well as academic leadership. Baranek is a leading expert in the field of autism spectrum disorder. Her research related to early identification and intervention for children with ASD has changed thinking about the disorder. She was appointed USC Chan's associate dean in 2017. The Mrs. T.H. Chan Professorship in Occupational Science and Occupational Therapy was created in 2014 as part of the historic \$20 million gift to the division by USC Trustee Ronnie C. Chan and his wife, Barbara.



ROLL TO SERVE AS CO-PRINCIPAL INVESTIGATOR ON NEW MULTIDISCIPLINARY MINDFULNESS STUDY

Associate Professor Shawn Roll has been awarded a two-year, \$60K grant to help launch an interdisciplinary research collaborative advancing the science of mindfulness. Roll is one of six faculty members from various disciplines to serve as co-principal investigator. He has already published an integrative review of mindfulness' role in physical rehabilitation and continues to study the application of mindfulness techniques into hand therapy. Dozens of faculty members from across the university will participate, including Lisa Aziz-Zadeh; Beth Pyatak '02, MA '04, PhD '10, MS '15; and Sook Lei-Liew MA '08, PhD '12.



USC CHAN LAUNCHES NEW DIVERSITY, EQUITY AND ACCESS COMMITTEE

Earlier this year, USC Chan launched a new Diversity, Equity and Access Committee. The group, composed of faculty, staff and students, has laid out three goals. First, it aims to serve as a resource for the development of an accessible, diverse, equitable and supportive climate at USC Chan. Secondly, it will assist in the development of resources, trainings and support for faculty to competently develop curriculum that facilitates students' growth as culturally responsive practitioners. Finally, it will support the development and implementation of an initiative to recruit and retain highly qualified faculty, staff and students from traditionally underrepresented groups. The effort is part of a university-wide initiative to increase access and opportunity for underrepresented minorities.



USC CHAN INFLUENCING WHAT'S TAUGHT AND THOUGHT ABOUT AUTISM

Fourteen USC Chan faculty members and alumni contributed their expertise to the fourth edition of *Autism Across the Lifespan*. The AOTA-published textbook aims to empower future clinicians to meet the diverse and unique needs of patients with autism spectrum disorder. Contributing USC Chan faculty members include Grace Baranek; Stefanie Bodison '92, MA '93, OTD '10, MS '17; Catherine Crowley OTD '06; Tracy Jalaba MA '14, OTD '15; Mary Lawlor; Chantelle Rice Collins '07, MA '08, OTD '09; and Linsey Smith '05, MA '08, OTD '15. Contributing USC Chan alumni include Karla Ausderau MA '00, PhD '09; Amanda Jozkowski PhD '14; Zoe Mailloux '77, MA '81, OTD '12; Susanne Smith Roley OTD '12; Susan Spitzer MA '95, PhD '01; Heidi TenPas MA '16, OTD '17; and Bill Wong MA '11, OTD '13.

NEW STRATEGIC PLAN TO PUT FIVE-YEAR GOALS INTO MOTION

5

-YEAR GOALS | 2019-2023

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

After more than a year in development, *USC Chan Strategic Plan FY 2019-23* was officially adopted in late 2018. The plan outlines six goals guiding the division's growth, priorities and operations throughout the next five years. Beginning in early 2019, eight strategy implementation teams composed of faculty, staff and students began working to put next steps into action.

"The overarching task facing every successful, forward-thinking organization is to answer basic questions, such as 'Where does our organization stand now?,' 'What's our vision for the future?,' and 'How do we best chart a course from today to tomorrow?,'" said Associate Dean and Chair Grace Baranek. "USC Chan is no exception. I am so proud of this new strategic plan that empowers us to do so."

In general, strategic planning is the process of carefully considering those complex questions, examining opportunities and challenges, responding with an agreed-upon framework of goals and tactics to pursue and monitoring measurable outcomes.

In addition to the new goals, the plan reaffirms USC Chan's preexisting mission statement, offers a new vision statement and, for the first time, defines six organizational core values at the heart of all activities across the division.

"You can't judge success simply by outcomes achieved — success is also measured by our ethics enacted," Baranek said. "These six core values promise that what we do is only as good as how and why we do so."

Building the blueprint

USC Chan Strategic Plan FY 2019-23 was crafted through a four-phase, year-long process that was led by a steering committee made of Chan faculty, staff and students who worked in tandem with consultants from AMC Strategies, LLC. AMC Strategies has previously partnered with

higher education institutions and academic medical centers, including Children's Hospital Los Angeles, Duke Health and Stanford Health Care.

Input during the plan's development was provided by more than 700 people — including Chan faculty, staff, alumni and Board of Councilors members, USC academic leaders and community partners from fieldwork education sites — via individual and group interviews, focus groups and electronic survey. A digital "comment box" was also available for stakeholders to provide both identified and anonymous feedback. Its ultimate intention was to foster as transparent and responsive a process as possible. Open-ended feedback delivered through

the comment box broadly covered topics such as curriculum, cultural sensitivity and potential collaborations.

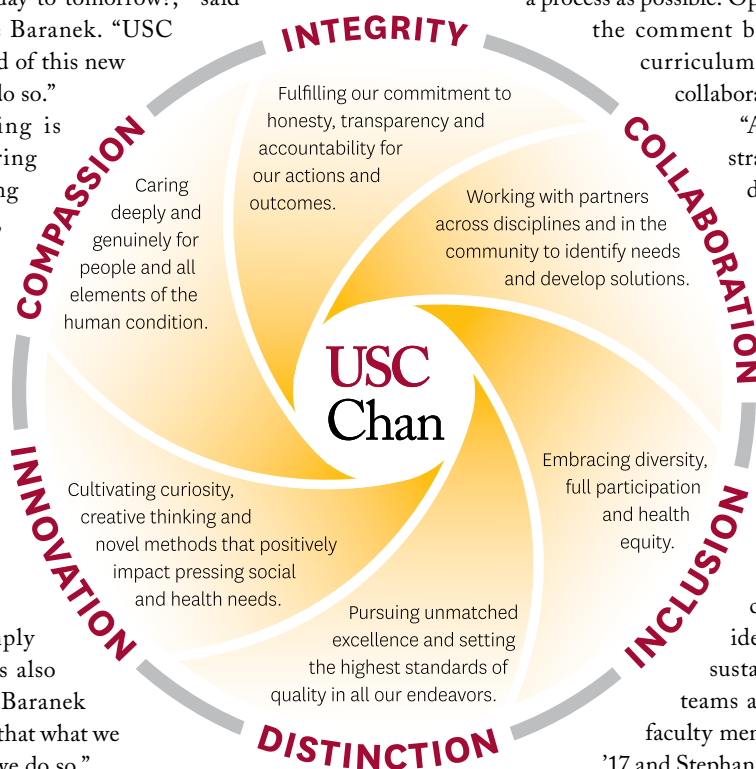
"At the outset, I wanted to ensure our strategic planning was purposeful, data-driven and collaborative," Baranek said. "I am pleased with how we have been able to deliver on those objectives, and I am confident we have created an inspirational and achievable plan."

A plan in place

With the new plan in hand, eight strategic implementation teams are currently refining actionable tactics, assigning "champion" leaders who have the capacity to execute action items and identifying resources needed to enact sustainable change. Each of those eight teams are tracking their efforts along with faculty members Emily Schulze MA '16, OTD '17 and Stephanie Mielke MA '00, OTD '06, who are coordinating the plan's many moving parts. Dashboards of

key objectives and measures will also help the teams track their short- and long-term progress, as the division together looks ahead to the year 2023.

"There's a saying that a goal without a plan is just a wish," Baranek said. "Thanks to this plan, together we can realize USC Chan's vision of leading innovation to advance health and well-being through meaningful occupations."





MISSION

Through innovative research, education and clinical practice, the USC Mrs. T.H. Chan Division of Occupational Science and Occupational Therapy optimizes people's engagement in the ordinary and extraordinary activities of life.



VISION

Lead innovation to transform health and well-being through meaningful occupations.



CORE VALUES

INTEGRITY — Fulfilling our commitment to honesty, transparency and accountability for our actions and outcomes.

COLLABORATION — Working with partners across disciplines and in the community to identify needs and develop solutions.

INCLUSION — Embracing diversity, full participation and health equity.

DISTINCTION — Pursuing unmatched excellence and setting the highest standards of quality in all our endeavors.

INNOVATION — Cultivating curiosity, creative thinking and novel methods that positively impact pressing social and health needs.

COMPASSION — Caring deeply and genuinely for people and all elements of the human condition.



STRATEGIC GOALS

SYNERGISTIC COLLABORATION — Leverage unique strengths and fortify convergence across education, research and practice.

GROUNDBREAKING APPROACHES — Generate and integrate knowledge to advance occupational science and occupational therapy.

TRANSFORMATIVE PARTNERSHIPS — Establish impactful partnerships within and outside of the USC community.

LEADERSHIP DEVELOPMENT — Prepare diverse leaders with a strong identity and understanding of occupation and its power to transform people and society.

KNOWLEDGE MOBILIZATION — Accelerate dissemination and movement of discoveries into active use for societal impact.

HEALTHY COMMUNITIES — Improve health equity, well-being and quality of life across local, national and global communities.

HEALTH CARE FOR THE HOMELESS

USC Chan's Deborah Pitts has worked to integrate occupational therapists into agencies that help the homeless, and her efforts are now paying off in new ways.

BY KATHARINE GAMMON

The numbers tell a startling story about Los Angeles' current homelessness crisis: Between 2010 and 2017, L.A. County's homeless population surged 42 percent from 38,700 to more than 55,000 people. The 2018 Greater Los Angeles Homeless Count reports that more than 65 percent of homeless adults have lived in the county for more than 20 years, and almost half of people experiencing homelessness for the first time cited the loss of employment or financial strain as the primary cause.

Associate Professor of Clinical Occupational Therapy Deborah Pitts PhD '12, an expert in psychosocial rehabilitation and community-based occupational therapy programming, has seen the growing crisis firsthand.

"Over the last several years, there has been an effort to address the health needs," she says. "For people living on the streets, they age sooner, have all sorts of complications, fall through on recommendations and of course, being homeless, need access to housing."

Pitts was recently awarded a Workforce Education and Training Program Public Mental/Behavioral Health Pipeline Grant from the State of California's Office of Statewide Health Planning and Development. The new grant provides customized learning experiences, academic support, career development, mentorship and financial assistance in order to increase the number of USC Chan occupational therapy students who go on to pursue an OT career in public mental/behavioral health services.

While USC has long been working with Downtown L.A.'s Skid Row through efforts led by the USC Dworak-Peck School of Social Work, Pitts says that occupational therapists got involved seven years ago when the university set up a student-run interprofessional clinic. Today, that USC Student-Run Clinic uses a team-based approach of faculty members and students from pharmacy, medicine, physician assistant studies and OT — including mentorship, courtesy of Pitts — to provide comprehensive care to the homeless.

USC Chan occupational therapists are also helping through the Skid Row Housing Trust (SRHT) project. Pitts recalls getting an email from the organization about bringing in an occupational therapist to join their permanent team.

"I responded immediately," she says. "Anyone who wanted to talk to us about what we can do, I was interested."



Phil Lee MA '18, OTD '19 is an occupational therapy doctorate student currently doing his year-long practice residency training at Skid Row Housing Trust. There, spread across 26 buildings, 2,000 tenants are working to rebuild safe, stable and fulfilling lives. Lee knows occupational therapy can contribute toward that vision. Working alongside SRHT residents, he offers strategies, techniques and resources that empower residents to perform meaningful daily activities and build towards their long-term life goals.

"For me, as an OT, I'll help them with literally anything — ADLs/IADLs, maintaining their unit, helping them re-engage in meaningful activities," Lee explains. "With another tenant, I'm playing a care coordination role."

Stephanie Moon MA '17, OTD '18 is a Chan alumna now working in public mental health. While at USC, she worked with the Student-Run Clinic and was drawn to the John Wesley Community Health (JWCH) Institute, the area's largest homeless health care agency. From that initial volunteer role, she was able to negotiate an independent study position and, then, land a clinical doctorate residency at JWCH.

Less than one year since graduating, Moon now works as director of behavioral health and case management, supervising managers and social workers at the MLK Jr. Recuperative Care Center located in South L.A.

"Occupational therapists are trained in the holistic picture," she says. "We have the training across the spectrum, and our focus is on function."

With her USC Chan training, Moon says she can confidently work across various specialties to better meet the needs of people with health challenges. She hopes that an OT-centric view of function can one day soon be at the heart of homeless health care.

"For me, there is just something very sacred about stepping into a space with a person in need, and serving them," she says.

Approximately 5 percent of the American OT workforce is in mental health-related services. But Pitts is optimistic, thanks in part to her pipeline training grant, about the presence and contributions that occupational therapists make for vulnerable populations in these care settings.

"We are one of those providers who straddle the behavioral health and medical world."

5 THINGS TO KNOW ABOUT:

Rebecca “Beccy” Aldrich ’05, MA ’06

BY YASMINE PEZESHKPOUR MCM ’16

Beccy Aldrich ’05, MA ’06 joined USC Chan in August 2018 as an associate professor of clinical occupational therapy. Previously, she served as associate professor in the department of occupational science and occupational therapy at Saint Louis University, where she worked for more than seven years. Here are five more things to know about Aldrich:

1 Aldrich discovered occupational therapy literally by accident. The summer before her freshman year, Aldrich’s brother needed occupational therapy after an accident. Aldrich, an English major at USC at the time, was pleasantly surprised to learn USC was home to a top-ranked occupational therapy program. She began taking courses that first semester and eventually earned her bachelor’s and master’s degrees from the division.

2 Aldrich teaches a virtually connected class with international OT students. Starting this spring, she is teaching courses that virtually connect USC Chan students with peers at the University of Cape

Town’s Division of Occupational Therapy. “Facilitating this connection is important because knowledge and best practices are being developed all over the world and should be shared for future innovations.”

3 She grew up in Fresno, Calif., and had been living in Missouri and North Carolina for the past 12 years. Aldrich is most excited to be back under SoCal’s sunny skies. “I joke that I’m solar-powered,” she says, with a laugh.

4 When she’s not teaching or researching, she counts swimming and dancing among her favorite occupations.

“I enjoy swimming, both as a form of exercise and as a meditative practice. I also enjoy a style of social dancing known as lindy hop, which is one of several dances that fall under “swing dancing.”

5 Aldrich originally intended to be a classical musician. She had offers from several universities to study clarinet performance, but once she was accepted to USC, she changed her educational goals. “In a way, that decision — which pre-dated my first exposure to OT — paved the way for my introduction to occupational science, so I guess it’s a good thing that I didn’t end up majoring in music!”



PHOTO BY HANNAH BENET

ON ITS 20TH ANNIVERSARY, “OCCUPATION AS ENDS, OCCUPATION AS MEANS” AS RELEVANT AS EVER

BY EVAN NICHOLAS MA '19



Julie McLaughlin Gray's now-familiar article, "Putting Occupation into Practice: Occupation as Ends, and Occupation as Means," turned 20 years old in 2018. During the past two decades, this seminal work has captured attention from many corners of our profession and swayed the discourse of how a generation of occupational therapy practitioners understand and explain their work.

In the late '90s, McLaughlin Gray MA '95, PhD '06 was an occupational science doctoral candidate at USC, splitting her time between academia and clinical practice. An advanced student of Neurodevelopmental Therapy, she was spending a lot of time in a component-driven clinical setting and was coming to grips with a familiar struggle: how to remain true to the core of our profession by using occupation-based activities during clinical encounters.

"Purposeful activity was always interesting and meaningful to me," recounts McLaughlin Gray, now USC Chan's associate chair for curriculum and faculty. "We, as OTs, learn an approach to solving problems, rather than any specific technique. We have a unique understanding of the complexity of action in

context."

She explains that the fundamental discourse outlined in her paper stretches back to many previous conversations with peers and mentors. One of those mentors, alumna Wendy Wood MA '88, PhD '95, was the acting guest editor of the *American Journal of Occupational Therapy* when she suggested McLaughlin Gray consider writing an article on the subject.

"Being a clinician is a big part of my identity, and this article was written for clinicians," McLaughlin Gray says.

A sense of the future

Twenty years after its 1998 publication in the *American Journal of Occupational Therapy*, it's rare to find someone in our profession unfamiliar with the piece. It is commonly found in graduate-level occupational therapy curricula, and a cursory ProQuest search shows more than 60 citations of it within scholarly literature, both within occupational science and occupational therapy as well as disciplines including gerontology, substance abuse treatment, motor behavior and child neurology.

"Of course, some of the most exciting moments are when I get an email from someone internationally, or see the work cited in a journal," McLaughlin Gray says. "But probably the most important thing to come of this, for me, is that it crystallized something in my own thinking and perspective."

She says it was sometime around the article's publication that she finally made peace with leaving behind the notion of OTs as upper extremity specialists. That realization freed her to move toward applying the broader ideals of occupation-driven practice, and to comprehending the significance of occupations in the grand scheme of people's lives.

"What you really want is to plug into passion, identity and hope. If you can do that, at the end of the session there is an outcome that resonates with [the client] as a person, and gives a sense of the future and what's possible."

McLaughlin Gray's article continues to serve as a poignant reminder of what's possible when occupation is kept at the center of practice.

"Putting Occupation into Practice: Occupation as Ends, Occupation as Means" is available online at doi.org/10.5014/ajot.52.5.354.





Research Buzz

IN MERRY MEASURE

How statistical modeling helps solve complicated research questions

BY JOHN SIDERIS
PROFESSOR OF RESEARCH

Measurement has always posed problems for scientists; the questions we can answer are limited by the tools we have to measure the variables we are interested in. This is no less true in the social and medical sciences. When what we hope to understand is not directly measurable, we instead measure its effects on those variables that are directly observable. For example, though we cannot directly assess a person's willingness to participate in activities or their heart health, we can ask that person what they did today or measure resting heart rate, and then use those as indicators of the constructs we are studying.

No single observable indicator is sufficient on its own, so tests are usually constructed of multiple indicators or items. The basic tenet of test theory is that items correlate, or “covary,” with other items because a person's response to each is dependent on the underlying construct.

One area of my measurement research is sensory processing in children with autism spectrum disorder. Our team was eager to take a closer look at an existing tool, the *Sensory Experiences Questionnaire* (Baranek, 2009), to see if we could revise its scoring in order to gain a more precise measurement of its four constructs: hyporesponsiveness (HYPO); hyperresponsiveness (HYPER); sensory interests, repetitions and seeking behaviors (SIRS); and enhanced perception (EP). By conducting factor analyses — a way of adjusting the influence of each item such that stronger items have greater influence than weaker items — we tested the structure of the scale and provided it with more precise scoring.

A closer look at two of the items from the HYPO subscale helps illustrate the psychometric complexities which I try to unravel in my work. The first HYPO subscale item asks about a child's tendency to disregard loud noises, while the second concerns the tendency to disregard a new person who enters their field of vision. Both items are scored on a scale from one (“Never”) to five (“Always”).

We expected these items to be correlated with each other primarily because high scores indicate HYPO. If a child disregards loud noises, conventional wisdom assumes they would likely also disregard somebody walking into the room.

But there are notable sources of measurement error in each of these items. The first assesses the child's response to auditory stimuli, while the second assesses response to visual stimuli and references a social situation. This is by design; the authors recognized the importance of testing across sensory modalities and in both social and non-social contexts. But, when measurement error is common among several items, it creates superficial covariance within a modality or context that, in turn, diminishes the precision of measurement for the overall scale. We can do better.

My solution to this problem was to incorporate the modalities and social context into the scale as “measurement factors.” Measurement factors are



PHOTO BY HANNAH BENET

independent constructs that can remove the shared error variance from the scale's four sensory constructs. In other words, measurement factors can be used to provide much more precise estimates. That led us to determine that HYPER and EP are actually more strongly correlated than research had previously shown. The same goes for the correlation we found between HYPO and SIRS.

Thanks to statistical modeling, we also found that these sensory patterns are not simply additive but are interactive — they interact with each other in their associations with autism severity. For example, as expected, there is a strong association between HYPO and SIRS scores; however, this association is moderated by HYPER such that the association weakens as HYPER scores increase.

It's OK if you have forgotten a thing or two since your grad school statistics class. That's why quantitative psychologists like me use advanced psychometric modeling so that other scientists, clinicians and even parents and patients have a clearer understanding of the questions that we're asking and answering, all thanks to better measurement.

Double Digits

The numbers don't lie. As of early 2019, Trojan faculty members have together amassed more than \$18 million in active, federally funded research grants. Yes, the previously unprecedented figure is a vote by federal agencies in favor of USC Chan's research excellence and expertise. But more importantly, federal dollars allow Trojan scientists to do the research today that can lead to a healthier tomorrow. Read about three new studies — funded by the National Institutes of Health, the National Science Foundation and the U.S. Department of Defense — that have pushed USC Chan's research portfolio into the double digit millions.



New Study Probes the Sensory Effects of Prenatal Alcohol Exposure

Researchers have known for decades that babies born to mothers who drank heavily while pregnant have differences in brain function. Now, an innovative new study will test their sensory processing.

BY KATHARINE GAMMON

The sparkling vineyards near Cape Town, South Africa, produce some of the world's best wines. But there's a darker story among the people who work and live in the sunny wineries' shadows: The region has the world's highest prevalence of fetal alcohol spectrum disorders.

"The wineries are the issue because the people who work in the vines were historically paid part of their wages in wine," says Elizabeth Sowell, professor of pediatrics at the Keck School of Medicine of USC.

There, binge drinking on weekends — yes, even during pregnancy — is culturally acceptable. It makes the area unique to studying fetal alcohol spectrum disorders and their subsequent effects on childhood development. That's what Stefanie Bodison '92, MA '93, OTD '10, USC Chan assistant professor of research, plans to do.

Bodison was recently awarded an administrative supplement from the National Institutes of Health to join a study currently conducted by Sowell, examining the interrelationships between the neural networks of sensorimotor integration, caregiver-reported measures of sensory processing, behavioral motor measures and cognitive measures in young children with prenatal alcohol exposure. Sowell's larger, parent grant identified and studied a group of 6,000 kids, ranging from birth to 12 years old, with prenatal alcohol exposure, recruited from a clinic in South Africa's wine region that serves underprivileged families. Bodison will focus on a subset of these kids by taking a deeper look at their brain's networks and body's abilities to process sensory information.

Alcohol use around the world

Globally, prenatal alcohol exposure is the number one known cause of cognitive and behavioral impairment, Sowell explains, with effects that significantly impact brain development. But the problems related to alcohol exposure aren't evenly distributed.

"It's more prevalent in places like Cape Town and in the Northern Plains in U.S. Native American populations," she says. "There are pockets in the world where it's much more prevalent than others."

Research shows that binge drinking — for women, defined as four or more drinks per occasion — and regular heavy drinking put a fetus at greatest risk for severe problems, according to the National Institute on Alcohol Abuse and Alcoholism. However, even lesser amounts can cause damage.

Because cultural stigma of drinking during pregnancy is lower relative to that in the United States, the South African mothers were especially forthcoming about their habits throughout the study, Sowell explains.

"Here in the U.S., you don't get as honest a reporting of drinking behavior during pregnancy."

The sensory study

For Bodison's new study component, 100 kids, between 8 and 12 years old, will undergo MRI scans in order for researchers to visualize structural measures of brain volume, thickness and surface area. It can be tricky to coax a child to stay still inside a noisy, rumbling brain scanner, but the researchers have come up with some handy tricks.



Stefanie Bodison

"We put them in a mock scanner so they can get used to the sound of the magnet moving," Sowell explains.

Bodison will also give parents a survey that assesses their kids' sensory systems, gathering information about sensitivity to touch, movements and loud environments, for example. Bodison will be traveling to Cape Town to work directly with a small sample of the children and administer commonly used motor skills tests.

"From a junior investigator perspective, this is a wonderful opportunity because I can do a study where the majority is funded," says Bodison, acknowledging the expenses of brain imaging research. "My piece expands the scope without the cost of writing a grant."

Building better interventions

Bodison is also an occupational therapist, and she's interested in how the brain's pathways and connections influence everyday activities.

"Understanding these brain mechanisms will help us to create interventions to improve functions in daily life," she says.

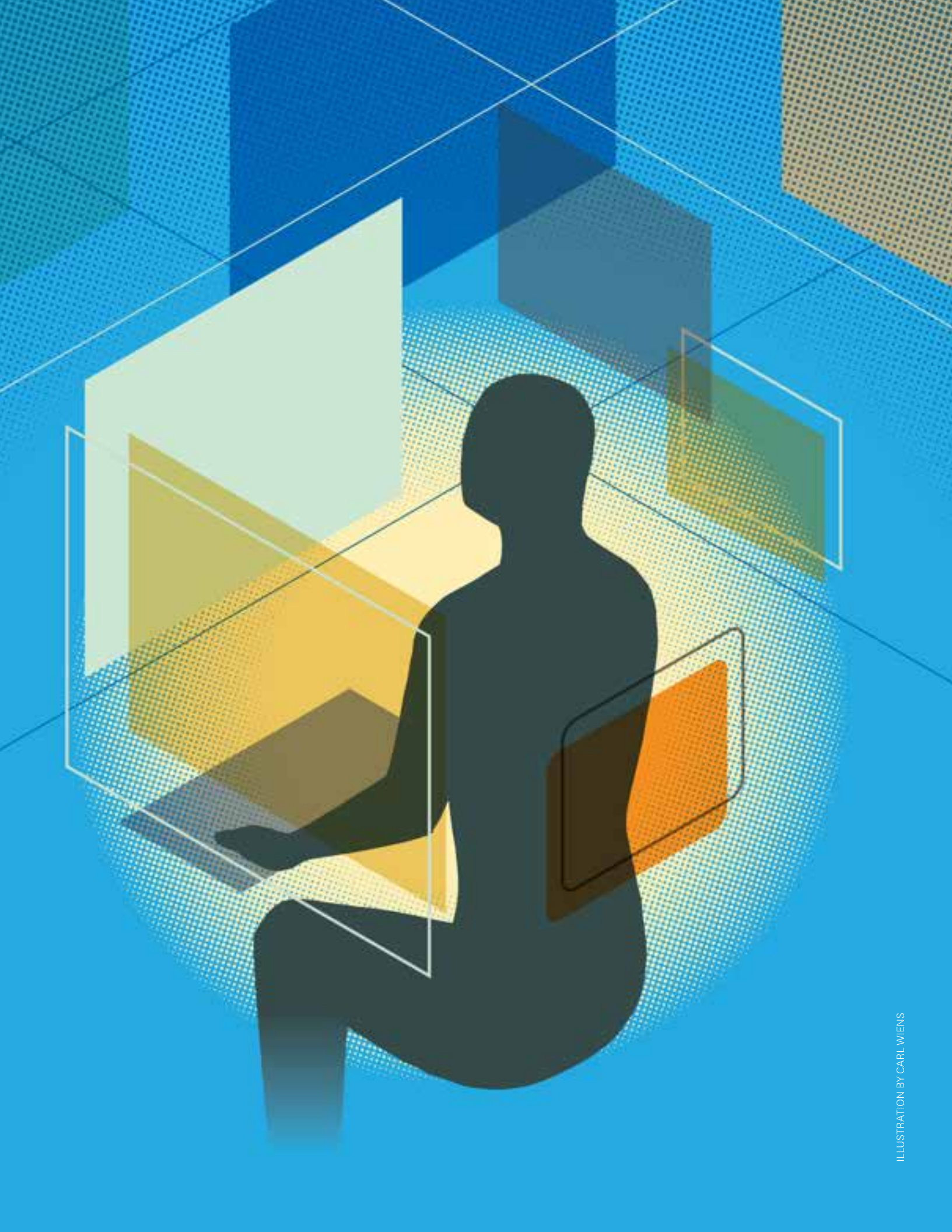
Kids with prenatal alcohol exposure have challenges in motor skills and self-regulation that can impact their academic achievements. Developing customized interventions for a given person or population can make a lasting difference. Even though the participants in Bodison's study will be between 8 and 12 years old, there is still an enormous amount of brain wiring that occurs during this developmental stage, Sowell says.

"The big idea is to show that the intervention is changing circuitry in the brain that has an impact on improved functioning."

Sowell points to brain research studies using MRI scans of young adults before and after learning a new skill, like juggling.

"After they learn a new skill, you can see differences in white matter in the brain," she says. "If we understand what circuits in the brain are affected by prenatal alcohol exposure, we can then potentially target interventions that will have a real impact on people."





Designing Tomorrow's Workstation, Today

Interdisciplinary team funded by the National Science Foundation is using artificial intelligence in search of healthier ways to work.

BY JAMIE WETHERBE MA '04

Statistics show that if you're reading this, you're likely indoors at a table or a desk. If so, pause for a moment: How's your posture? Is the room temperature comfortable? Lighting OK?

In the U.S., 81 million office workers spend at least 75 percent of the day at a desk, and logging long hours in front of screens has been linked to significant health conditions, including heart disease and diabetes. There has to be a better way of doing work.

USC Chan faculty member Shawn C. Roll, along with a team from USC and ARUP, a global design and engineering firm, was recently awarded a \$667,000 grant from the National Science Foundation to design a workstation that uses artificial intelligence. More than a smart desk that interacts with connected technology like a smartphone, this intelligent workstation will learn and adjust to worker preferences and patterns with the goal of improving overall well-being.

"The idea behind the workstation is not only to provide a comfortable work environment, but to move an individual toward healthier conditions," explains Roll, an associate professor and director of USC Chan's Ph.D. in occupational science program.

The project has three parts: lighting, temperature "and my focus — ergonomics, injury prevention and productivity and performance," Roll adds.

Burcin Becerik-Gerber, who is working alongside Roll, will be focused on thermal and visual comfort, two factors that can impact your health more than you might think.

"The current design of heating, cooling and lighting systems don't accommodate the differences we have in our preferences," says Becerik-Gerber,

associate professor of civil and environmental engineering and Stephen Schrank Early Career Chair in Civil and Environmental Engineering at the USC Viterbi School of Engineering. "They're designed for specific standards."

For instance, people with narrow thermal comfort ranges are more prone to type 2 diabetes, heart disease and obesity, according to Becerik-Gerber, and indoor lighting can create headaches and fatigue.

"And that can impact job satisfaction — and our lives," she adds. "We spend 86 percent of our time indoors. Our team wants office workers, including myself, to have the benefits of an intelligent workstation because health and well-being is directly linked to your happiness in work."

Now six months into this three-year project, the researchers are currently working on using sensors to best understand a user's comfort level, including posture, lighting, ambient temperature and other environmental factors.

"The goal is for the machine to learn about the worker: Are you warm or cold? Do you prefer to be warm or cold? Do you have a headache and need dimmer lighting today? Are you getting tense and need to stand?" Roll explains.

To examine these social aspects of human-machine interaction, Becerik-Gerber and Roll are collaborating with Gale Lucas, research assistant professor of computer science at USC Viterbi and the USC Institute for Creative Technologies. The team is currently collecting focus group input about how the workstation should offer prompts, including the degree of automation users are comfortable conceding. If the desk senses that a user is positioned in such a way that might trigger back pain, should it make automatic adjustments with the user's health in mind? Or will people prefer having the final say over their workstations?

"I think it likely depends on the person," Roll says. "But I'm guessing if you're in the middle of something, you don't want your desk to start rising and tell you to stand up, if it's interrupting your workflow."

An uncomfortable history

Since the widespread introduction of computer workstations in the '90s, long office hours have been tied to a myriad of health-related conditions.

"At first, we saw a huge uptick in carpal tunnel because we were suddenly typing all the time, and where monitors needed to be positioned causing neck problems," Roll says.

Yet as entire segments of the economy have become wholly dependent on digital tools, so too have workstations changed in ways that

ultimately impact productivity and well-being.

"A lot of us are multitasking, with multiple monitors and tabs," Roll explains. "Our workstations aren't always setup for that, which causes different types of musculoskeletal and eye strain."

Another unfortunate side effect of more automated systems and advanced technology is more sedentary behaviors, which can cascade to further chronic health conditions.

"Our lives are tied to this tech; more people are staring at their computers all day," Roll says. "We're seeing the relationship between office work and diabetes, heart problems and weight issues."

Recent trends of sit-stand desks, treadmill desks and adjustable chairs and monitors are useful, but, as Roll says, people aren't always taking the initiative to adopt and use them.

"You can teach someone to modify their workstation in a healthy way, but unfortunately, people quickly fall back into their routines and habits," he explains. "That's what's really unique about these intelligent workstations — we're creating something to support that behavioral change in individuals."

Beam me up

Ideally, the workstation could eventually learn to evolve based on different parameters and users' goals. That could mean maintaining fitness for healthy individuals, improving habits for workers who want to be healthier or adjusting to somebody's specific physical impairment or disability.

"We aim to design a workstation that can sense all of these things, process that information and provide feedback, so we can improve wellness and performance across all of these different categories," Roll says.

Additionally, employees who feel better will perform better, boosting productivity for companies.

"I think the benefits are tremendous," Becerik-Gerber says. "If people want to use their spaces and feel better while at work, things like absenteeism, work-related injuries and conditions will decrease. If we can help people become healthier and more productive, that would be a huge benefit to employers."

Every good designer knows that form follows function, meaning that the eventual shape of the intelligent workstation of the future remains to be seen.

"It goes beyond a desk; that's where it gets a little sci-fi and *Star Trek*," Roll says. "It might include the surrounding walls and heaters; it may become an entire capsulated bubble that's completely connected to one person and their individual needs."

More Than a Gut Feeling

With Department of Defense grant, USC and UCLA researchers to explore gastrointestinal bacteria's role in autism.

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

Millions of microorganisms make their home within the human stomach and intestines. Made up of critters with names like *Alistipes*, *Bilophila* and *Collinsella*, it's an alphabet soup of bacteria with a literal life of its own.

Collectively known as the gut microbiome, this complex and ever-changing bacterial environment plays a critical role in health and disease. A balanced microbiome conducts essential metabolic and immune system functions, such as vitamin production and the management of allergic reactions. But an out-of-sync microbiome is linked to a number of conditions, including irritable bowel syndrome, obesity, diabetes and — perhaps — autism.

To investigate how gut bacteria may be related to the brains and behaviors of children with autism spectrum disorder, USC Chan faculty member Lisa Aziz-Zadeh is partnering with scientists at the University of California, Los Angeles on a first-of-its-kind study.

"The classic social and communication deficits of autism spectrum disorder are widely known," says Aziz-Zadeh, associate professor at USC Chan and the USC Dornsife College of Letters, Arts and Sciences. "But if you ask a parent of a child who has autism, there's a good chance you will hear stories of tummy troubles, like constipation, cramping and pain, that can dramatically impact families' everyday quality of life."

The new three-year, \$808,000 grant funded by the U.S. Department of Defense will add a gut microbiome component to an NIH-funded project that is currently being run by Aziz-Zadeh and her colleagues. That study is capturing MRI brain scans of children, ages 8 to 16, from populations with and without autism, and correlating brain activity with social and motor skills.

Now, by collecting and analyzing stool samples from participants currently enrolled in their project, the team will use machine-

learning algorithms in order to compare bacterial signatures to brain scans and behavioral analyses. No known studies have yet looked at these combined effects in this population.

"Our motivation is to try to understand ASD from a whole body perspective — the gut, the brain and behavior — and how each component interacts together," Aziz-Zadeh says.

Accessing the axis

Although autism has been studied for more than 75 years, only lately has research suggested a link between its symptoms and gastrointestinal health. For example, studies have shown that children with ASD, compared to their neurologically typical peers, have significantly different gut compositions.

However, the ways in which microbiome composition is potentially linked to behavior are still unclear. Those probable mechanisms are even more intriguing in light of new discoveries that gut bacteria can activate central nervous system pathways and send biological signals back and forth, to and from the brain. This communication system is often referred to as the gut-brain axis.

The gut's role may also help explain the recent rise in popularity of alternative diet-based treatments for autism. While the evidence is far from conclusive, the anecdotal impact of approaches such as the gluten-free, casein-free diet are well known within family and clinical circles, although dietary approaches don't work for all children with ASD.

That degree of variability underscores another of the researchers' hopes for the new study. Patterns or correlations that emerge from their data may highlight some of the biological reasons for autism's notoriously wide-ranging spectrum of symptoms.

"We want to look at how differences in the gut microbiome are related to brain structure and function in order to better understand what makes the symptoms of ASD so different from one person to the next," Aziz-Zadeh says.

"But if you ask a parent of a child who has autism, there's a good chance you will hear stories of tummy troubles, like constipation, cramping and pain, that can dramatically impact families' everyday quality of life."



Lisa Aziz-Zadeh

Rivals with a cause

More than \$500,000 of the project's total \$808,000 budget will be allocated to Aziz-Zadeh. The remainder will support the cross-town efforts headed up by Emeran Mayer, professor at UCLA's David Geffen School of Medicine and director of the UCLA Gail and Gerald Oppenheimer Family Center for Neurobiology of Stress and Resilience. An expert on gut-brain interactions, Mayer and his team will be responsible for the project's microbiome analysis.

The project is funded by an Idea Development Award from the Autism Research Program managed by the DOD's Congressionally Directed Medical Research Programs. The federally funded Autism Research Program focuses on improving diagnoses and treatments for a better life for people with autism and their families.

That's a vision for the future which Aziz-Zadeh hopes this project can make valuable contributions toward. A whole body model that links the gut, brain and behavior could one day even lead to advancements in GI treatments for ASD, such as fecal transplantation, probiotics and targeted gut therapies.

"It's exciting to think about this entirely new dimension of autism — how we conceptualize it, and talk about it, and how we study it," Aziz-Zadeh says. "It really is a brand new frontier."

If you know a child who would like to participate in this research, please visit chan.usc.edu/minds. The research team is seeking right-handed children, ages 8 to 16, who are typically developing, who have autism spectrum disorder or who have developmental coordination disorder. Participants will be compensated for their time and will receive an image of their brain.



GenNext

Meet the Trojans pushing occupational science and occupational therapy forward. Interview by Trevor San Antonio MA '20.

MARÍA CRISTINA JIMÉNEZ MA '20

Age: 46

Hometown: San Juan, Puerto Rico; Los Angeles

Undergraduate studies: Theatre and Women's Studies at College of the Holy Cross (Worcester, Mass.); Master of Fine Arts at The New School for Social Research (New York City)

Meaningful occupations: Reading books and re-reading them, watching movies and re-watching them, traveling and cooking

Describe OT in a few words: Helping anyone, anywhere, through creativity and scientific knowledge to become more engaged in life.

Can you talk about life in Puerto Rico and how it affected you? Growing up in Puerto Rico, which is a small island, we stuck with the same group of people. There is a sense of tribalism; it feels like a village and a community. When I think back, I think of the ocean and I think of family. My experiences in Puerto Rico made me realize it takes a village to help and heal each other.

Why did you choose to pursue a career in occupational therapy? I had a severe motor vehicle accident when I was 15 years old. I had to rely on a lot of physical therapy and psychotherapy during my recovery. All my adult life has been about helping people out of pain. I first did that through yoga and then Roling [editor's note: Roling is a bodywork and massage approach focusing on the physical manipulation of fascia]. I wanted a better job prospect and I had some friends who were OTs. I asked them questions and their answers inspired me to pursue this profession, to continue to help people out of pain.

What is your favorite memory made at USC Chan to this point? I was on the [admission] waitlist and I found out I got in three days before the start of the program! On my first day, I met a second-year student and I told him I felt out of place because of my age, my acceptance date and my own insecurities. He looked at me and said, "You belong here." What he said stuck with me, and I want to share that feeling of belonging with not only my classmates and colleagues, but also with my future clients.



PHOTO BY HANNAH BENET



FEATURED PUBLICATION

How occupational therapy can flip the culture of America's skilled nursing facilities

Samia Rafeedie MA '05, OTD '06 was the lead author of "Opportunities for Occupational Therapy to Serve as a Catalyst for Culture Change in Nursing Facilities," recently published in the *American Journal of Occupational Therapy*. The article was co-authored by Amy Lamb, president of the American Occupational Therapy Association, and Christina Metzler, AOTA's chief public affairs officer.

According to the Medicare Payment Advisory Commission, in 2015, approximately 15,000 skilled nursing facilities (SNF) across the nation provided 2.4 million post-acute care stays to 1.7 million Americans. With 30 percent of all occupational therapists working in SNF, this practice area is among the profession's largest; in aggregate, occupational therapy practitioners bill therapeutic exercise and therapeutic activities codes millions of times each year.

Yet there is a paucity of occupational therapy research literature addressing the significant problems facing the residents of SNFs, problems which could be alleviated

through meaningful occupational therapy that yields significant outcomes to minimize disability, increase life expectancy and improve quality of life.

In their *AJOT* article, Rafeedie and colleagues reaffirm the need for more research and better clinical interventions in SNF practice. The authors call for continued advocacy by individual practitioners in order to provide more purposeful and patient-centered care for the benefit of clients, facilities and payment systems. Doing so, especially in this setting, can not only kickstart institutional culture changes, but will support and empower vulnerable people to lead more meaningful lives.

Ensuring that older Americans are receiving high-quality and effective rehabilitation and skilled nursing services must be a priority for society and for healthcare systems, priorities within which occupational therapy's distinct value will continue to play a critical role.

—Mike McNulty '06, MA '09, OTD '10

Read "Opportunities for Occupational Therapy to Serve as a Catalyst for Culture Change in Nursing Facilities" online at doi.org/10.5014/ajot.2018.724003.

(Continued on page 26)

Rebecca Aldrich '05, MA '06 was the lead author of "An Occupational Science Perspective on Occupation, Adaptation, and Participation," a chapter in the book *Adaptation through Occupation: Multidimensional Perspectives*, published by Slack, Inc.

Lisa Aziz-Zadeh was the lead author of "Understanding Activation Patterns in Shared Circuits: Toward a Value Driven Model," published in *Frontiers in Human Neuroscience*; occupational science student **Emily Kilroy** PhD '18, Postdoc '20 was a co-author.

Grace Baranek was the lead author of "Longitudinal Assessment of Stability of Sensory Features in Children with Autism Spectrum Disorder or other Developmental Disabilities," published in *Autism Research*; **Mike Carlson** and **John Sideris** were co-authors. Baranek and Sideris were co-authors of "Sensory Features as Predictors of Adaptive Behaviors: A Comparative Longitudinal Study of Children with Autism Spectrum Disorder and other Developmental Disabilities," published in *Research in Developmental Disabilities*. Baranek and Sideris were co-authors of "Efficacy of the ASAP Intervention for Preschoolers with ASD: A Cluster Randomized Controlled Trial," published in the *Journal of Autism and Developmental Disorders*.

Occupational science student **Elizabeth Choi** PhD '23 co-authored the chapter "Infant Anatomy and Physiology for Feeding" in the book *Core Curriculum for Interdisciplinary Lactation Care*, published by Jones & Bartlett Learning.

Occupational science student **Lucia Floríndez** PhD '19 was the lead author of "Gangs in Los Angeles: Limited Occupational Possibilities for Latino Male Adolescents," published in the *Journal of Occupational Science*.

Ashley Halle '08, MA '11, OTD '12 was the lead author of "Occupational Therapy and Primary Care: Updates and Trends," published in the *American Journal of Occupational Therapy*; alumnus **Don Fogelberg** PhD '08 was a co-author.

PhD student **Kaori Ito** MA '16, PhD '21 was the lead author of "Pipeline for Analyzing Lesions After Stroke (PALS)," published in *Frontiers in Neuroinformatics*; **Sook-Lei Liew** MA '08, PhD '12 was a co-author.

Mary Lawlor co-authored the "Family Perspectives on Occupation, Health, and Disability" chapter in the latest edition of *Willard and Spackman's Occupational Therapy*, published by Wolters Kluwer.

Sook-Lei Liew was the lead author of "Variable Neural Contributions to Explicit and Implicit Learning during Visuomotor Adaptation," published in *Frontiers in Neuroscience*. Liew was also the lead author of "Laterality of Poststroke Cortical Motor Activity during Action Observation Is Related to Hemispheric Dominance," published in *Neural Plasticity*; **Kaori Ito**, **Lisa Aziz-Zadeh** and alumna **Julie Werner** '07, MA '08, PhD '13 were co-authors. Liew was also a co-author of "Distributed Cortical Structural Properties Contribute to Motor Cortical Excitability and Inhibition," published in *Brain Structure and Function*.

Shawn Phipps '97 co-authored the chapter "Occupational Therapy Professional Organizations," published in the latest edition of *Willard and Spackman*.

Elizabeth Pyatak '02 MA '04, PhD '10, MS '15 co-authored "Improving Medication Adherence in the Pediatric Population using Integrated Care of Companion Animals," published in *Patient Education and Counseling*. Pyatak and alumna **Kristine Carandang** PhD '18 co-authored "Analyzing Occupational Challenges through the Lens of Body and Biography," published in the *Journal of Occupational Science*.

Samia Rafeedie MA '05, OTD '06 authored "Special Needs of the Older Adult" in the latest edition of *Pedretti's Occupational Therapy: Practice Skills for Physical Dysfunction*, published by Elsevier.

Pamela Roberts co-authored "Continuum of Care," published in the latest edition of *Willard and Spackman*.

Cheryl Vigen, **Kristine Carandang**, USC Chan staff member **Jeanine Blanchard** MA '99, PhD '10 and **Elizabeth Pyatak** co-authored "Psychosocial and Behavioral Correlates of A1C and Quality of Life among Young Adults with Diabetes," published in *The Diabetes Educator*.

Occupational science student **Carin Wong** PhD '19 was the lead author of "Understanding Communication between Rehabilitation Practitioners and Nurses: Implications for Post-Acute Care Quality," published in the *Journal of Applied Gerontology*; alumna **Jenny Martínez** '09, MA '10, OTD '11 was a co-author.



CLASS NOTES

Three Trojans were recognized with annual awards bestowed by the Occupational Therapy Association of California. **Monica Becerril** MA '96 received the OT Practice Award; **Bryant Edwards** MA '05, OTD '06 received the Janice Matsutsuyu Outstanding Service Award; and **Jerry Jordan** '14, MA '15, OTD '16 received the Luella Grangaard Political Action Award.

Four USC Chan alumni contributed chapters published in the latest edition of *Willard and Spackman's Occupational Therapy*. **Christy Billock** MA '98, PhD '05 authored "Personal Values, Beliefs, and Spirituality;" **Mary Alunkal Khetani** MA '02 co-authored "Social Participation;" **John White** MA '92, PhD '99 authored "Disability, Community, Culture, and Identity;" and **Wendy Wood** MA '88, PhD '95 co-authored "The Philosophy of Occupational Therapy: A Framework for Practice."

Heather Gillies MA '14, OTD '15 co-authored "Delivering High Quality Hip Fracture Rehabilitation: The Perspective of Occupational and Physical Therapy Practitioners," published in *Disability and Rehabilitation*.

Joan Rogers MA '68 was named a 2019 recipient of the American Occupational Therapy Foundation's Leadership Service Commendation.



WAYNE L. HINTHORN, 90

HUSBAND, AEROSPACE ENGINEER, USC CHAN BOARD
OF COUNCILORS MEMBER AND SUPPORTER OF
TROJAN OCCUPATIONAL THERAPY

USC Chan Board of Councilors member Wayne L. Hinthorn died peacefully in his sleep on Sept. 27, 2018. He was 90.

Hinthorn was born in 1928 in Cañon City, Colo., the second son of Clinton and Gertrude Hinthorn. He graduated from Colorado Springs High School in 1946. In 1951, he graduated from the University of Colorado, Boulder, with a bachelor's degree in mechanical engineering. Hinthorn served in the Army, and was stationed in Germany from 1953 to 1955. In 1979, he received a master's degree in systems management from the USC Viterbi School of Engineering.

Hinthorn's professional career was spent in the aerospace industry, where he worked on various programs, including the Boeing B-47 Stratojet bomber, the Agena rocket and satellite, the Titan III space rocket booster and the NASA Space Shuttle program.

He was married to his late wife, occupational therapist and USC alumna Micky Terzagian Hinthorn '53, for 51 years. Together, they supported many causes, including USC Chan and Community United Methodist Church in Half Moon Bay, Calif. After her death, Hinthorn continued honoring her memory by serving as a member of USC Chan's Board of Councilors from 2011 until his death.

A DEEPER MEANING

From childhood consumer to hospital-based care provider, John Margetis reflects on a lifetime's journey with occupational therapy.

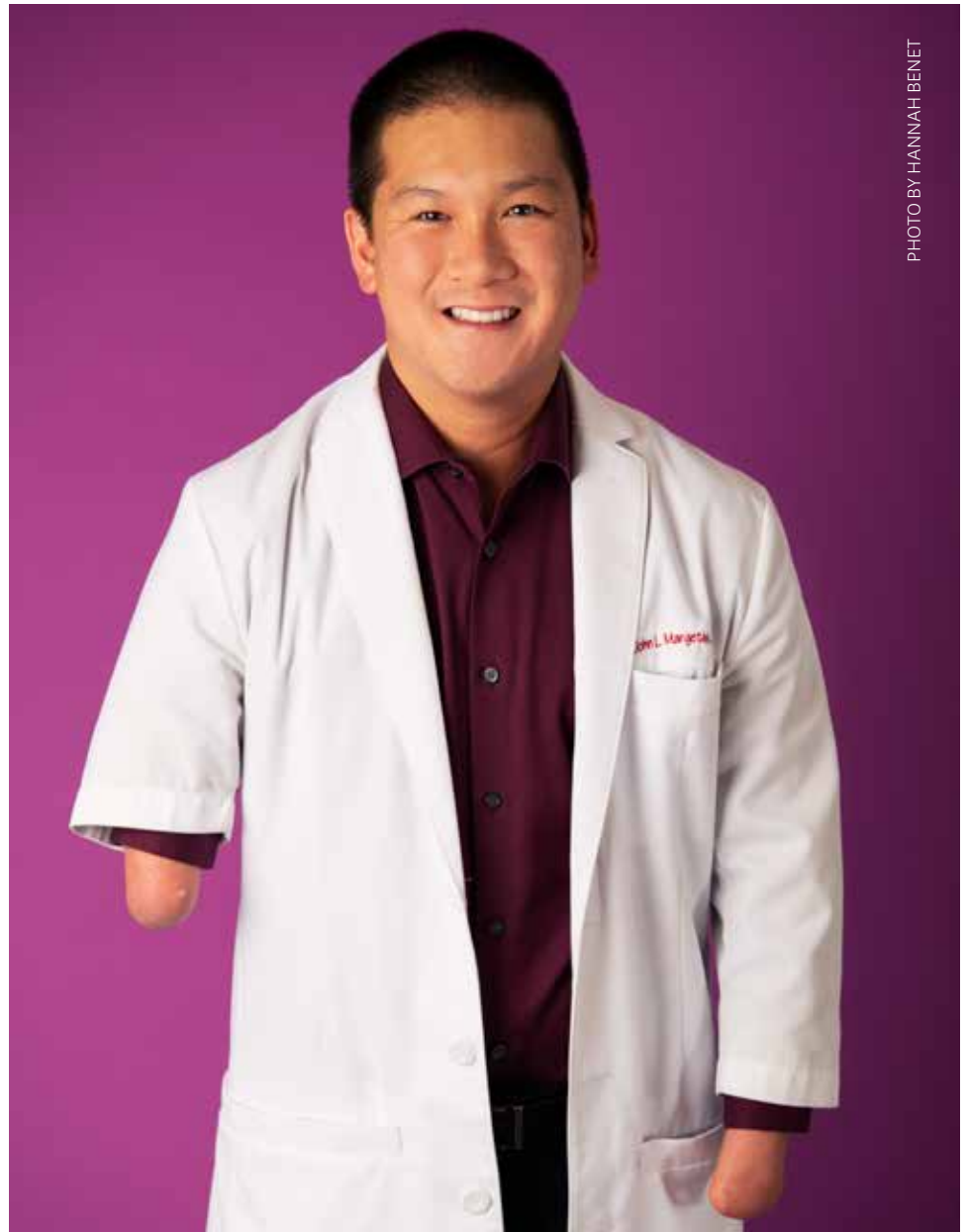
**BY JOHN MARGETIS '11, MA '12, OTD '13,
ASSISTANT PROFESSOR OF CLINICAL
OCCUPATIONAL THERAPY**

I was introduced to occupational therapy when I was about 16 months old. My birth parents knew that I, a child with a disability, would be afforded more opportunities growing up in the United States. Shortly after I arrived from Taiwan, my mother who adopted me, Dr. Monique Margetis, took me to Shriner's Hospital of Los Angeles where I began my journey into occupational therapy.

As a child, I struggled with anger and frustration because, like most children, I just wanted to fit in. But unlike most children, I was born with congenital amputations that made "fitting in" exceedingly difficult; my bulky metallic prosthetic arms often broke the deal. Nevertheless, my occupational therapists at Shriner's — Joanna and, later, Joanne — worked tirelessly with me, challenging and inspiring me to see my disability in a different light. They gave me the language and verbiage to talk about my disability. They helped me re-conceptualize the notion of "being different" as a positive attribute, and taught me how to be comfortable in my own skin.

As an undergraduate, I lacked direction. I bounced from major to major, political science to earth science. Finally in my senior year, I took a course titled "Introduction to Occupational Science and Occupational Therapy" with Kate Crowley OTD '06, and she reminded me of the power of occupational therapy. After just two weeks in her class, it suddenly dawned on me: I should become an OT!

During graduate school, I finally understood the value of what my occupational therapists gave me as a child. I realized that, woven into the fabric of those childhood OT sessions where I was solely focused on eating cinnamon-flavored apple sauce using my prosthetic arms and a swivel spoon, my occupational therapists were slowly reframing



my self-perception while teaching me self-advocacy skills. Those are among the very same skills that I now impart to my patients at Keck Hospital of USC.

As I entered clinical practice, I was fortunate to be closely mentored by Jess Holguin '96, MA '05, OTD '11, who instilled in me strong habits of knowledge acquisition. He modeled for me an unrelenting pursuit of knowledge, and when I voiced to him an interest in neuroimaging, he encouraged me to pursue it. I vividly remember him saying, "Start now. Start looking at the imaging of every single one of your patients. Imagine how many [images] you'll have looked at by the end of your residency." That encouragement, coupled with habitual "deep dives" into neuroscientific literature, recently culminated with a lecture I gave at AOTA's Adult Rehabilitation Specialty

Conference, titled "Occupational Therapy: Practical Implications of Computational Neuroscience and Connectomics."

These days, I see myself first and foremost as an educator. As an occupational therapist in neurocritical care, I educate patients and families about their neurological injury, how it currently impacts their occupational capacities and, with their input and feedback, outline a plan to return them to living their lives. In the classroom and at conferences, I educate students and clinicians on the role of neuroimaging in occupational therapy practice. And finally, as a clinical educator, I mentor doctoral residents and fieldwork students entering the profession to begin learning about how, and growing their appreciation for, the impact that occupational therapy has on patients' lives.

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.

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

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PHOTO BY LINDSEY NAM YIP DDS '16

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