

MEDICAL UNIVERSITY OF SOUTH CAROLINA

COLLEGE OF HEALTH PROFESSIONS

DIVISION OF OCCUPATIONAL THERAPY

“ Our OT program offers diverse opportunities to be involved with our class, campus, community, and country. Our faculty empowers every student by supporting us academically and personally. ”

“ As technology continues to expand and improve, educators must consider new and unique ways in which video can add value to the classroom using an evidence-based approach. ”



MESSAGE FROM THE DIRECTOR



Craig Velozo, Ph.D., OTR/L, FAOTA

Division Director, Occupational Therapy

After 43 years of offering exemplary Bachelor of Science and Master of Science in Occupational Therapy education, the Medical University of South Carolina (MUSC) occupational therapy program has reached a major milestone by completely transitioning to a Doctor of Occupational Therapy program. Our program offerings now include both entry-level and post-professional doctorate programs. This transition is consistent with the research and scholarship of our doctorly-trained faculty and the increased professional demands placed upon the entry-level occupational therapist.

The overall mission of our program is to excel in education and scholarship. Our educational program boasts a National Board for Certification in Occupational Therapy (NBCOT) overall pass rate of 100 percent. Additionally, our faculty are recognized for their scholarship through national awards and externally-funded research programs.

I am pleased to share with you the excellence of our educational programs and introduce you to the breadth of MUSC occupational therapy scholarship that strives to support MUSC's mission of changing what's possible.

A handwritten signature in black ink that reads "Craig A. Velozo".

Craig Velozo, Ph.D., OTR/L FAOTA
Division Director, Occupational Therapy

94%

NBCOT
Certification pass rate
on first attempt

98%

Graduation rate

100%

Overall NBCOT
Certification pass rate

U.S. News and World Report ranks our program 17th among U.S. universities

NBCOT certification pass rate on first attempt, graduation rate, and overall NBCOT certification pass rate percentages are averages over the last three years.

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Leading education with innovative, interprofessional mobile applications

“As technology continues to expand and improve, educators must consider new and unique ways in which video can add value to the classroom using an evidence-based approach.”

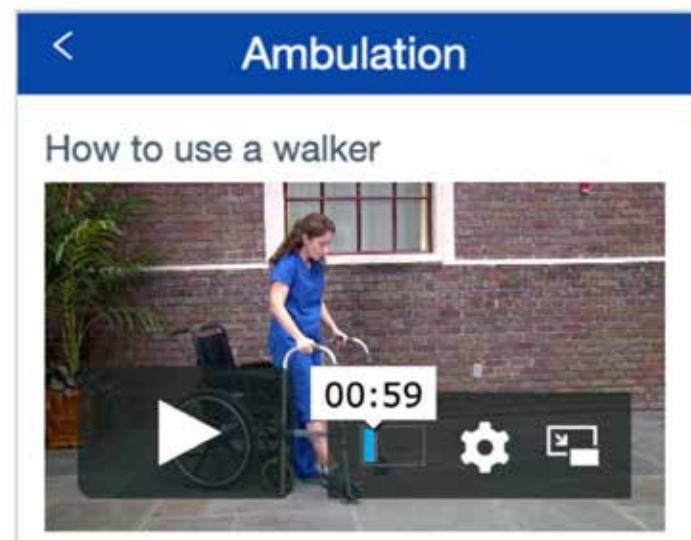
Amanda Giles, OTD, OTR/L, assistant professor in the Division of Occupational Therapy, was nationally recognized with the American Occupational Therapy Association (AOTA) Emerging and Innovative Practice Award for her visionary work in creating educational mobile applications (apps) which are currently marketed and utilized as required textbooks in occupational therapy (OT) and physical therapy (PT) classrooms worldwide, including schools in Israel and across the United States. Her first app, GONI RehabLearning: Goniometry for Clinicians (GONI), was published on the iTunes and Google Play stores in 2016, followed by her second app, MOBI: Mobility Aids (MOBI) in 2017. Both apps offer high-definition videos and images along with evidence-based text, quizzes, and functional application.



Top: Dr. Amanda Giles accepting her 2019 MUSC Innovator of the Year award. Pictured with (left to right) Drs. Zoher Kapasi, Craig Velozo, Rick Segal, Nancy Carson.

Left: MOBI: Mobility Aids is an interprofessional educational mobile app designed to teach the use of ambulatory assistive devices, such as canes, crutches, and walkers.

Giles emits a passion for student learning and began pursuing app development as a means to fill a need based on student feedback in her lab. She recognized that current trends in higher education demand the need to re-examine traditional pedagogical approaches and consider innovative online learning experiences. OT and PT students have reported that GONI and MOBI are user-friendly, easily-accessible, and increase confidence. Further, students with access to GONI videos were more likely to report improved exam preparation and to recommend the continued use of GONI videos compared to students with access to live lab videos.



MOBI includes high-definition images and videos along with evidence-based text, quizzes, and case studies.

A top priority for Giles is to ensure that her work is high-quality, evidence-based, and shared with a larger audience, including OT, OTA, PT, PTA, and nursing faculty and students. “Given the growing emphasis on educational technology, it is necessary to inform educators on the best use of video as a course study tool,” said Giles. To ensure evidence-based work, Giles engaged in the following steps: (1) applied best practices from adult learning pedagogy and instructional design principles, (2) cross-referenced textbooks and journals from within and outside of OT, (3) consulted with interprofessional faculty and full-time clinicians, and (4) piloted both apps with OT and PT students in multiple institutions using a systematic approach to gather feedback and make improvements.

Giles is invested in providing resources to help faculty and students connect the classroom to the clinic. She posted faculty resources on her company website, RehabLearning.com, including a manual for flipping the classroom using GONI and MOBI. In addition, she has made over twenty national and local presentations specifically related to the use of apps in the

classroom, two of which were recognized as a research highlight at the AOTA National Conference. She has published two articles on this topic and has also recently co-authored a book chapter titled, “Educational technologies: Enhancing learning, engagement, and global connectedness” which is anticipated to be released in the fall of 2019. Giles is a member of the AOTA Scholarship of Teaching and Learning (SoTL) Leadership Team whose goal is to support educators in the SoTL through mentorship. She was also on the founding committee for the South Carolina Conference in Teaching and Learning in Higher Education in 2017.

Giles is a unique entrepreneur, inventor, and educator. She is the first faculty member from MUSC to create a publicly available mobile application and the first to develop a comprehensive mobile app textbook for OT education. In 2017, she was inducted into the National Academy of Inventors. She was also recently named an “I am an MUSC inventor” and selected as the MUSC Inventor of the Year for 2019. In May 2019, she won first place in the education category of MUSC’s Shark Tank-like competition which will fund her next app on manual muscle testing as well as upgrades to the GONI app. Most importantly, her work in mobile applications promotes OT practice and ensures that future practitioners use relevant technologies to meet societal needs.

Right:
GONI: RehabLearning Goniometry for clinicians is an interprofessional educational mobile app designed to teach goniometry skills. It's available in the iTunes and Google Play stores.



Increasing hand functional recovery for stroke survivors using wearable technology

Despite tremendous gains in medicine and bioengineering, stroke hand rehabilitation has remained unable to meet the basic needs of many stroke survivors – even with aggressive rehabilitation their hand impairment persists.



In 2012, as an exploratory investigation, Na Jin Seo, Ph.D., a faculty member in the Division of Occupational Therapy at MUSC, set out to enhance outcomes for stroke survivors with hand impairment using neuromodulation. It was her vision to provide an effective, affordable, user-friendly way to improve hand functional recovery by combining neuromodulation with upper extremity rehabilitation therapy. The product of her research was a new sensory stimulation technology that can be delivered via smartwatch or other wearable devices.

Seo combined her expertise in engineering and upper limb rehabilitation to design a device that facilitates hand function in individuals with stroke. Characterizing the hand impairment post-stroke biomechanically, revealed tight functional coupling between sensory input and motor output and ultimately led to the idea of using sensory stimulation to affect motor recovery. Sensory stimulation is one of a variety of neuromodulation techniques that have recently been developed to facilitate neuroplasticity underlying motor recovery.

The new sensory stimulation is a specific vibration that is delivered to the affected wrist of the stroke survivor. As a result of the vibratory stimulation, the part of the brain responsible for the hand is also stimulated, neuroplasticity for hand function is improved, thus enhancing the user's ability to grip and manipulate objects with the hand. Seo developed the technology to be accessible on a broad range of devices. The vibratory stimulation can be delivered using the internal vibrator of a

smartwatch by simply connecting the watch to the app she has developed, or the technology can be licensed and built into a custom device.

She collaborated with experts in occupational therapy, neuroimaging, and biostatistics to conduct pilot studies of technology. In one study, published in the *Physical Therapy Journal*, 12 stroke survivors received a two-week upper extremity therapy program in which all participants wore the device, but only half received stimulation during therapy. The group that received vibratory stimulation during therapy recovered their hand function significantly more than the group that received therapy only.

The initial results of these trials are promising and encourage future large trials to definitely determine the clinical benefits of the new sensory stimulation technology.

Seo has obtained a patent for the technology and a National Institutes of Health (NIH) Small Business Grant, and the technology was selected for the 2019 LaunchPad Rehab Tech Innovation Competition at the American Congress of Rehabilitation Medicine Conference. Although it won't be easy, she hopes that the technology will one day be available to the public. "I would like to make the technology available for people who need it by bringing more awareness to the research and maybe even gaining FDA approval."



Dr. Na Jin Seo shares the findings from her research.

Dr. Craig Velozo honored with the 2019 Eleanor Clarke Slagle Lectureship Award



and/or clinical practice.” Velozo was present at the 2019 AOTA Annual Conference & Expo in New Orleans, Louisiana to accept his award.

The award offers Velozo the opportunity to reflect upon his 25 years of research in patient and clinician reported outcomes measurement. Velozo was among the pioneers who introduced Rasch measurement and item response theory (IRT) measurement into occupational therapy and rehabilitation research. The methodology has revolutionized the way we review and evaluate clinician and patient reported outcomes. IRT has made a tremendous impact on the healthcare. So much so, that the National Institutes of Health (NIH) has invested over \$80 million

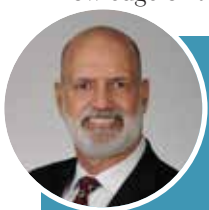


Dr. Craig Velozo accepted his award at the 2019 AOTA Annual Conference. Pictured with (left to right) Ellen Cohn, ScD, OTR/L, FAOTA, 2018 award winner, and AOTA President, Amy Lamb, OTD, OTR/L.

to implement this methodology in the development of the Patient Reported Outcomes Measurement Information System (PROMIS). Velozo, with his colleagues and doctoral students, were among of the methodology groups involved in developing several of the PROMIS measures.

In his lecture, which will be presented at the 2020 AOTA Annual Conference & Expo, Velozo plans to overview the advances of Rasch and IRT methodologies in health care. He will provide empirical evidence supporting occupational therapy as critical to rehabilitation. Furthermore, he will demonstrate how the occupational therapy profession can lead health care in applying Rasch and IRT methodologies in facilitating interventions of individual clients.

Craig Velozo, Ph.D., OTR/L, FAOTA, follows in the footsteps of the late Maralynne D. Mitcham Ph.D., OTR/L, FAOTA as the second MUSC Division of Occupational Therapy faculty member to receive the prestigious Eleanor Clark Slagle Lectureship Award. The award, presented by the American Occupational Therapy Association (AOTA), is among the highest honors in the occupational therapy profession. According to the AOTA, the purpose of the lectureship “is to honor a member of the AOTA who has substantially and innovatively contributed to the development of the body of knowledge of the profession through research, education,



ABOUT

Craig Velozo,
Ph.D., OTR/L, FAOTA

Veloze has been a principal investigator on numerous grants/contracts to develop patient reported outcomes (PRO) and clinician observational outcome measures. His expertise is in the application of Rasch measurement and item response theory in developing patient/therapist reported outcomes, short form tests and computerized adaptive tests.

FACULTY SCHOLARSHIP



Interprofessional Education

Hazel L. Breland, Ph.D., OTR/L, FAOTA, focuses her scholarship in the areas of interprofessional education, community engagement and health promotion of persons aging with chronic conditions and the medically underserved. Breland was the 2019 president of the Association of Rheumatology Health Professionals (ARHP): A Division of the American College of Rheumatology (ACR).



Psychosocial Impact

Nancy Carson, Ph.D., OTR/L, FAOTA, conducts scholarship in community-based settings serving adults with serious mental illness and focuses on sensory modulation, social participation, nutrition, and wellness.



Pediatric Research and Community-Based Programming

Patty Coker-Bolt, Ph.D., OTR/L, FAOTA, is known for her work in pediatric constraint-induced therapy and modified approaches which have been used in national and international settings. Her current research focuses on early detection of infants at-risk for later delays and includes the development of an early infant screening tool, the Specific Test of Early infant motor Performance (STEP).



Educational Technology

Amanda Giles, OTD, OTR/L, is nationally recognized for developing and studying the use of two interprofessional mobile applications, GONI: Goniometry for Clinicians and MOBI: Mobility Aids. Her scholarship examines the educational impact of mobile apps versus textbooks, student-run free clinics, clinical simulation, and reflective video analysis. She currently serves as a leader on the AOTA Scholarship of Teaching and Learning Mentoring Program and as chair for the AOTA Commission on Education Curriculum Committee.



Stroke Rehabilitation

Emily Grattan, Ph.D., OTR/L, focuses her research on measurement and treatment of post-stroke neglect. Her work is currently funded through a Department of Veteran's Affairs Career Development Award.



Orthopedic Injuries

Tandra Marik, OTD, OTR/L, CHT, specializes in orthopedic injuries of the upper extremity with scholarship in conditions of the shoulder and elbow and upper extremity therapeutic taping. Her background provides students with a holistic approach to treatment of common orthopedic injuries.



Positive Psychology and Wellness

Amanda Sammons, DSc, OTR/L, ATC, focuses her scholarship efforts on optimizing student and faculty performance through positive psychology and wellness. She also specializes in upper extremity orthopedics with a focus on integrating occupation-based activities into treatment.



Therapeutic Device Development

Na Jin Seo, Ph.D., is known for her research in post-stroke hand impairment and therapeutic device development. She developed a wearable stimulation technology for patients with neurologic upper extremity impairment.



Addressing Health Care Disparities

Cristina Reyes Smith, OTD, OTR/L, is working to reduce health care disparities and promote access to occupational therapy services for underserved populations through community engagement, advocacy, and scholarship.



Outcomes Measurement

Craig Velozo, Ph.D., OTR/L, FAOTA, is internationally known for applying Rasch measurement to rehabilitation measures. His most recent work involves developing a self-efficacy measure for the National Institutes of Health's (NIH) Patient Reported Outcomes Measurement Information System (PROMIS).



Stroke Upper Extremity Rehabilitation

Michelle L. Woodbury, Ph.D., OTR/L, is conducting research with the goal of developing a scientifically-based model of post-stroke upper extremity recovery that when translated into front-line neurorehabilitation practice improves survivors' re-engagement in meaningful daily activities. Woodbury directs the upper extremity research initiative within the NIH Center for Biomedical Research Excellence (COBRE) for Stroke Recovery. She designed and licensed Duck Duck Punch, an innovative stroke rehabilitation computer game to promote upper extremity recovery.



Camp Hand to Hands uses play to help children improve movement

Camp Hand to Hands, an intensive therapy camp for children with hemiplegic cerebral palsy, was developed at MUSC by Patty Coker-Bolt, Ph.D., OTR/L, FAOTA, in 2001. The camp provides advanced clinical experience for our occupational and physical therapy students while enhancing the lives of children through the use of constraint-induced movement therapy (CIMT). CIMT is a rehabilitation approach that remediates the effects of “learned non-use” and improves overall function in the weaker arm and hand. It has been widely researched in the last decade

as a valuable therapeutic approach to use with children with unilateral motor weakness.

Traditional CIMT involves placing a restraint (glove/mitt) on the child’s non-affected arm to encourage the use of the affected arm for six hours of therapy per day for several consecutive weeks. Children are engaged in practice and intensive shaping techniques to train their weaker arm and hand. To fit the unique needs of children, our program is provided in a fun, therapeutic, day camp environment. During their week at Camp Hand to



Hands, children are given a puppet to wear on their non-affected hand and encouraged to use their weaker arm and hand to participate in daily activities.

MUSC students spend months planning and preparing for the 30 hours of intensive therapy delivered during camp week as part of an elective class taught by Coker-Bolt. They create a new theme each day and design age-appropriate therapy activities for each child based on their individual goals. Each child is paired with four MUSC student therapists for the week, working in shifts – two in the morning and two in the afternoon. Students take careful notes during their shift to communicate the child's progress to with their classmates under the supervision of MUSC faculty and volunteer therapists from the Charleston area.



Over the last 18 years, Camp Hand to Hands has provided CIMT to over 200 children at no cost to families thanks to generous support from the MUSC Camden Scott Meyer Pediatric Fund. Children are selected to participate based on need by the camp's directors, Coker-Bolt and Cindy Dodds, PT, Ph.D., PCS, from the Division of Physical Therapy. This year, Camp Hand to Hands welcomed 14 children ages three to 12. Most campers are from South Carolina, but occasionally the college hosts children from all over the world.

The Camp Hand to Hands model is now being used in many national rehabilitation centers across the country.



Making a difference in our community

The Community Aid, Relief, Education and Support Clinic (CARES) student-run free clinic is an interprofessional service-learning experience. Students from multiple disciplines and colleges have the opportunity to work together and learn from each other while serving the community at MUSC. Since 2005, CARES has provided clinical experience for medical, occupational therapy (OT), physical therapy (PT), pharmacy, and physician assistant (PA) students while delivering health care to the under- and uninsured population in the Charleston area and beyond. The clinic has two sites – CARES Medical and CARES Therapy. At CARES Medical, PA, medical, and pharmacy students see patients for their medical and pharmacological needs. OT and PT students see patients with rehabilitation needs at CARES Therapy under the supervision of licensed clinicians.

CARES Structure

Recognized as one of the premiere student-run free clinics in the nation, CARES Therapy sees individuals recovering from an event that has led to some form of disability, including stroke, spinal cord injury, orthopedic diagnoses, and progressive disease processes. Students from the Occupational Therapy Doctorate (OTD), Doctor of Physical Therapy (DPT), and Master of Health Administration (MHA) programs at the College of Health Professions interview for and hold various board positions as well as manage all day-to-day operations, including patient scheduling, fundraising, and clinic management, under the supervision of faculty and clinicians. One of the most rewarding aspects of CARES Therapy is when program alumni return to be clinical supervisors to current students.



CARES Therapy provides services for a diverse group of patients. Some patients have received traditional care in the hospital or other facilities and require additional care but have exhausted their benefits. Other patients have not had any type of previous care and CARES Therapy is one place that they can receive therapy services at no cost. While CARES Therapy operates separately from the MUSC Hospital Authority, it has the benefit of being located at the MUSC Occupational & Physical Therapy Clinic on Ashley Avenue. This allows the clinic to see patients in a typical community-based clinical site. The clinic is open two nights per week to serve the varying needs of patients. On Tuesday, patients with primary orthopedic impairments are seen and on Wednesday, patients with primary neurologic impairments are seen. A typical night at CARES Therapy involves three to seven student teams of upper and

CARES Therapy has more than 800 patient interactions each year serving the under- and uninsured Charleston population.

lowerclassman, under the supervision of local clinicians, designing treatment plans that will help the individual progress towards their specific goals. The patients set goals with their student therapist for their own recovery.

Community Impact

On average, CARES Therapy has more than 800 patient encounters each year. In 2018, the clinic provided services equal to \$287,467 in what would have been billed to insurance, a savings that directly impacts patients. Along with having clinicians donate over \$47,000 worth of billable services, the clinic was able to save the patients \$92,912 in what would have been visits to the Emergency Department (ED). Many patients said they did not go to the ED for pain or other musculoskeletal issues because they knew the clinic was available. For 2018 overall, CARES Therapy had a total economic impact of \$481,379, including donations which provide equipment and transportation costs.



Students work under the supervision of licensed clinicians to develop individual treatment plans for patients.



Over 90 presentations were accepted consisting of oral presentations, posters, and works in progress.

The College of Health Professions at MUSC hosted the 2019 Occupational Therapy Summit of Scholars

MUSC is proud to have hosted this year's American Occupational Therapy Association (AOTA)/ American Occupational Therapy Foundation (AOTF) Summer Institute of Future Scientists and the Eighth Annual Occupational Therapy Summit of Scholars conference.

The Summer Institute of Future Scientists in Occupational Therapy is a one-day program that matches potential student scientists with doctoral and post-doctorate mentors. Participants met with leading occupational therapy scientists to address topics such as possibilities within occupational therapy science,

considerations when evaluating potential doctoral programs, and career opportunities as a scientist. After the event, participants were invited to attend the Occupational Therapy Summit of Scholars.

The Occupational Therapy Summit of Scholars, affectionately known as the "OT Research Summit," was created by senior occupational therapy scientists and has been hosted at Washington University in St Louis, University of Illinois at Chicago, Thomas Jefferson University, University of Southern California, University of Pittsburgh, Boston University and,



collaboratively at the University of Kansas and University of Missouri. It is considered the premier research conference in the occupational therapy field. The OT Research Summit is designed for occupational therapy researchers to network, mentor, and receive feedback on their work.

This year's event brought together over 190 occupational therapy researchers from 56 universities, hospitals, and organizations both nationally and internationally. Over 90 presentations were accepted consisting of oral presentations, posters, and works in progress. The OT Research Summit was supported by past hosts, the AOTA, AOTF, National Board for Certification in Occupational Therapy, National Institutes of Health (NIH) Center for Large Data Research and Data Sharing in Rehabilitation (CLDR), NIH Training in Grantsmanship for Rehabilitation Research (TIGRR) at MUSC, NIH/National Institute of General Medical Sciences (NIGMS) Center of Biomedical Research Excellence (COBRE) in Stroke Recovery at MUSC, and University of Texas San Antonio.

On the last day of the event, MUSC leadership participated in a panel discussion on the "Critical Role of Institutional Support in Building Personal and Departmental Research Trajectories." The panelists included MUSC Provost, Lisa K. Saladin, PT, Ph.D., Director of the Division of Occupational Therapy, Craig Vellozo, Ph.D., OTR/L, FAOTA, and other faculty members from the College of Health Professions. The discussion gave insight into the research infrastructure at MUSC as well as how an individual can succeed as a researcher, including where to look and what to look for in a research position.



Andrew Persch, Ph.D., OTR/L, BCP, presented his grant application for peer review.



The Summit gives occupational therapy researchers from all over the world the opportunity to network with their peers.

Seventh Annual Maralynne D. Mitcham Lectureship

A day of sharing and fellowship for the occupational therapy profession

More than 150 students, alumni, and clinicians gathered for the Seventh Annual Maralynne D. Mitcham Lectureship. Guests travelled from all over South Carolina and beyond to attend the one-day event on July 19. This year's keynote "Situating the Power and Relevance of Occupation in Today's World" was delivered by Janice P. Burke, Ph.D., OTR/L, FAOTA.

Burke is a well-respected thought leader in the occupational therapy field. She is one of the founders of the Model of Human Occupation (MOHO). With Gary Kielhofner, DrPH, OTR, FAOTA, she has published on the conceptual framework and content of MOHO as well as the accompanying assessment and intervention. Burke is also widely recognized for her work in sensory integration (SI) theory and in the fidelity of SI research.

"We were thrilled to offer this year's lectureship to Dr. Burke. She's a fellow Eleanor Clarke Slagle Lectureship Award winner and a historic leader in our field," said Craig Velozo, Ph.D., OTRL/L, FAOTA, director of the Division of Occupational Therapy. "We were thrilled that she agreed to present."

After the lecture, participants gathered for the annual MUSC OT Alumni and Friends Luncheon. "It's a great way for us to stay connected with our alumni. It's exciting to have so many alumni come back each year and use the day as an opportunity for a reunion," Velozo added. "Many of them participated in our afternoon sessions. Our adult and pediatric tracks were taught by top-notch clinicians."



About the Maralynne D. Mitcham Lectureship Fund

The Maralynne D. Mitcham Lectureship Fund was established to create, in perpetuity, an annual lectureship program for the Division of Occupational Therapy at MUSC. The fund's purpose is to honor the collegial spirit, leadership skills, and mentorship of Maralynne D. Mitcham and promote a day of sharing and fellowship for the profession of occupational therapy.

Patty Coker-Bolt helps to establish “Vietnam National Rehabilitation Guidelines for Cerebral Palsy”



In 2017, Patty Coker-Bolt, Ph.D., OTR/L, FAOTA, was nominated by the World Federation of Occupational Therapy (WFOT) to serve as a consultant for Humanity and Inclusion (HI) project in Vietnam. The multi-year project, led by HI, aimed to develop rehabilitation protocols for children and adults with neurologic conditions. Project team members collaborated closely with healthcare providers in Vietnam through a \$5 million USAID grant.

As a result of the project and HI's efforts, the Vietnamese Ministry of Health issued the decision in 2018 to cover

additional rehabilitation services through national health insurances. The decision significantly increases access to rehabilitation services to children with cerebral palsy and their families. By September 2020, HI expects that over 8,000 Vietnamese with neurologic conditions will benefit from services in hospitals and rehabilitation centers. Additionally, over 400 health and rehabilitation professionals, community workers, and volunteers have been trained to set up upgraded rehabilitation services.

Coker-Bolt was part of the team who developed the new “Vietnam National Rehabilitation Guidelines for Cerebral Palsy,” which has been approved and published by the Vietnamese Ministry of Health. She also received grant funding to study intensive therapy models which can be delivered within the Vietnamese health care system. As part of her study, she worked closely with children's hospitals and rehabilitation centers in Ho Chi Minh City and Hanoi to determine if constraint-induced movement therapy (CIMT) could be delivered with fidelity in Vietnam healthcare settings.

Above: Dr. Coker-Bolt leading a workshop on CIMT.

Below: US Ambassador to Vietnam, Daniel Kritenbrink, visits Dr. Coker-Bolt's workshop in Hue, Vietnam at the University of Pharmacy and Medicine.



How can we improve measurement and treatment of neglect post stroke?

When asked what inspired her to study neglect, Emily Grattan, Ph.D., OTR/L, a faculty member in the Division of Occupational Therapy, said, “as a clinician, I saw stroke survivors with neglect having more negative outcomes and found it challenging to know how to best treat them. I believe we can use research to improve our evidence-based practice and the quality of life for stroke survivors.”

Neglect, a very common post-stroke side effect, is a deficit in a patient’s awareness or attention to one side of their body or their environment.

In addition to the other challenges faced by stroke survivors, those experiencing neglect may forget to dress one side of their body, leave one side of their dinner plate completely untouched, or even face serious safety concerns like missing obstacles in their field of vision.

Despite the high incidence of post-stroke neglect and its association with negative outcomes like greater disability and poorer motor recovery, there is a lack of effective evidence-based interventions to treat neglect. Further, researchers and clinicians are also challenged to measure a patient’s response to treatment using existing assessments. Current recommendations suggest clinicians administer a battery of assessments, something that is just not realistic for most busy clinicians.

Grattan’s earlier research examining the feasibility and preliminary efficacy of a repetitive task-specific practice intervention program for individuals with neglect led her to recognize the need for state-of-the-art scientific methods to measure the severity of neglect and develop assessment driven intervention programs to maximally reduce disability attributed to neglect. Her current research, funded by a Department of Veteran’s Affairs Career Development Award (CDA-2), is aimed at creating a new, streamlined assessment to make it easier for therapists to identify and treat neglect.

“There are over 60 different assessments available, but many are time consuming, paper and pencil-based, or don’t assess how neglect is impacting the patient’s ability to perform everyday tasks,” stated Grattan. “We are taking the most

sensitive assessments available – the ones that do the best job of measuring neglect – and piecing them together to determine how components from different assessments can be combined to create a more efficient and effective assessment that can guide treatment comprehensively.”

Of the available assessments, Grattan is most excited about the continued integration of virtual reality. The Virtual Reality Lateralized Attention Test (VRLAT) is a quick and easy to administer computer-based assessment that will eventually incorporate the use of a headset. She has observed that patients seem to more readily notice their impairment when using this



Dr. Emily Grattan demonstrates VRLAT during an event recognizing stroke recovery research efforts made by the College of Health Professions.

type of assessment and has noticed that results are on par with those of the functional assessments. She is in the first year of the five-year study and is optimistic that the final results of her study will validate these initial findings. Grattan is being mentored by an interdisciplinary team of experts from disciplines including occupational therapy, engineering, medicine, neuropsychology, and statistics.

In addition to the work focused on neglect measurement, she is also examining the impact of pairing transcranial direct current stimulation (tDCS), a form of non-invasive brain stimulation that uses direct electrical currents, with a motor rehabilitation program, to determine the impact of the intervention on cortical modulation and attentional and motor impairments for individuals with neglect.

A MESSAGE FROM THE DEAN



Of the 12 educational programs that we offer in the College of Health Professions at the Medical University of South Carolina (MUSC), occupational therapy is our highest ranked program by US News and World Report at number 17. This year, we welcomed our first cohorts in both our entry-level and post-professional doctoral programs.

The Division of Occupational Therapy faculty, students, and alumni remain actively engaged in the field, and I would like to highlight a few activities:

- Each summer, the program hosts the Maralynne D. Mitcham Lectureship and Alumni Luncheon, named for our former long-time program director and renowned educator and leader in the profession.
- Our director, Dr. Craig Velozo, received the Eleanor Clarke Slagle Lectureship Award in 2019.
- In June 2019, MUSC was honored to host the OT Summit of Scholars.
- The program recently adopted holistic admissions practices to promote a more diverse study body.
- Each year, faculty and students from the program travel internationally for medical mission trips and learning opportunities. Most recently, students served in Vietnam, Uganda, and Costa Rica.

We hope you enjoy learning more about this stellar program, and we invite you to be part of our growing college that is changing what's possible!

A handwritten signature in cursive script that reads "Soher F. Kapasi".

Zoher Kapasi, Ph.D., PT, MBA, FAPTA

Dean, College of Health Professions

A MESSAGE FROM THE DEPARTMENT CHAIR



As Chair of the Department of Health Professions (DHP) I am very excited about the present and future for the Division of Occupational Therapy. The DHP is a great mixture of people and programs. It is home to the five professional practice programs within the College of Health Professions: Anesthesia for Nurses, Cardiovascular Perfusion, Occupational Therapy, Physical Therapy, and Physician Assistant Studies. All the programs are ranked and have outstanding students, faculty, and staff. It also houses an undergraduate pathway program in Healthcare Studies.

The Division of Occupational Therapy is exceptional under the leadership of Dr. Craig Velozo, winner of the 2019 Eleanor Clarke Slagle Lectureship Award. He has done an excellent job of increasing research grants while continuing the outstanding innovative teaching for which the program is well-known. For example, the division now has principal investigators with National Institutes of Health (NIH) and Veterans Affairs (VA) funded grants. The faculty do a beautiful job with scholarship and innovation, with one faculty member winning the 2019 MUSC Innovator of the Year Award for app development. The division has transitioned from a master's to a doctorate program. The Occupation Therapy Doctorate (OTD) program is integrative, innovative, and stimulating. When I think of our occupational therapy division, I think of innovativescholarship that includes students. Faculty have a special relationship with their students that includes activity in global health and providing therapy for those in need through the pro-bono CARES Therapy Clinic. I hope you enjoy learning more details about the outstanding MUSC Division of Occupational Therapy!

Warmest Regards,

A handwritten signature in cursive script that reads "Richard L. Segal".

Rick Segal, Ph.D., PT, FAPTA

Chair, Department of Health Professions



About The Medical University of South Carolina (MUSC)

Founded in 1824 in Charleston, MUSC is the oldest medical school in the South, as well as the state's only integrated, academic health sciences center with a unique charge to serve the state through education, research and patient care. Each year, MUSC educates and trains more than 3,000 students and 700 residents in six colleges: Dental Medicine, Graduate Studies, Health Professions, Medicine, Nursing and Pharmacy. The state's leader in obtaining biomedical research funds, in fiscal year 2018, MUSC set a new high, bringing in more than \$276.5 million.

As the clinical health system of the Medical University of South Carolina, MUSC Health is dedicated to delivering the highest quality patient care available, while training generations of competent, compassionate health care providers to serve the people of South Carolina and beyond. Comprising some 1,600 beds, more than 100 outreach sites, the MUSC College of Medicine, the physicians' practice plan, and nearly 275 telehealth locations, MUSC Health owns and operates eight hospitals situated in Charleston, Chester, Florence, Lancaster and Marion counties. In 2018, for the fourth consecutive year, U.S. News & World Report named MUSC Health the number one hospital in South Carolina. To learn more about clinical patient services, visit muschealth.org.

MUSC and its affiliates have collective annual budgets of \$3 billion. The more than 17,000 MUSC team members include world-class faculty, physicians, specialty providers and scientists who deliver groundbreaking education, research, technology and patient care. For information on academic programs, visit musc.edu.

The entry-level occupational therapy doctoral degree program has applied for accreditation and has been granted Candidacy Status by the Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA).
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