

2020-2021

# InsideSargent

Boston University College of Health & Rehabilitation Sciences: Sargent College

## CLOSING THE GAP

**LEANNE YINUSA-NYAHKOOK  
STUDIES THE HEALTH  
INEQUITIES ENDANGERING  
BLACK MOTHERS AND BABIES**



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**BOSTON  
UNIVERSITY**

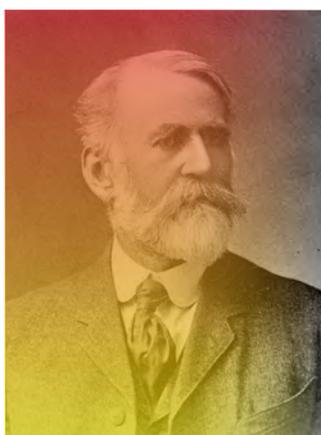
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**Taking Care of Your Mental Health During Challenging Times**

Dori Hutchinson and Larry Kohn from the BU Center for Psychiatric Rehabilitation offer tips and strategies for staying well and resilient, in a video at [bu.edu/sargent/inside-sargent](https://bu.edu/sargent/inside-sargent).

**You Have Low Back Pain... Now What?**

Physical therapists from the BU Physical Therapy Center share facts about pain science and treatments. [bu.edu/sargent/inside-sargent](https://bu.edu/sargent/inside-sargent).

**Research News**

Bookmark [bu.edu/sargent](https://bu.edu/sargent) for regular research updates.

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2020-2021



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# Dean's Message



**“While we worked as an institution to address and overcome the challenges posed by COVID-19 on campus . . . our Sargent community has been on the front lines of this pandemic.”**

## Dear Friends,

I hope this magazine finds you in good health and good spirits. We have experienced a year filled with uncertainty and upheaval—although not without hope—making healthcare, research, and education especially vital.

At Boston University and Sargent College, we quickly shifted to a remote learning format in March. I am proud to say the Sargent community rose to the challenge of the University’s flexible *Learn from Anywhere* plan, due in no small part to the dedication of our students, as well as exceptional faculty, academic counselors, and well-established digital learning capabilities.

Digital engagement through telehealth has also been surprisingly effective in our academic clinical centers. Providing clinical services in physical therapy, nutrition counseling, and speech therapy via telehealth enabled existing patients and clients to maintain and advance their treatment progress. A surprising benefit has been our clinicians’ enhanced insight into patients’ daily environments, which has reinforced our ability to adapt treatment to specific needs and to reach even greater levels of patient/client-centeredness (read more about this on page 22). And as social distancing protocols keep us physically safe, isolation has had an inevitably negative impact on our mental health. Assistant professor Dan Fulford’s timely research studies loneliness and how smartphones can help the socially disconnected to reconnect (page 20).

While we worked as an institution to address and overcome the challenges posed by COVID-19 on campus, our students and alumni discovered new opportunities to support current and new patients and programs all across the country. From managing testing sites to contact tracing to overseeing the nutritional needs of hospitalized COVID-19 patients, our Sargent community has been—and continues to be—on the front lines of this pandemic (page 14).

The past year also shined an overdue and painful light on the inequities in our healthcare system and, more broadly,

the systemic racism and unconscious bias that pervade our institutions. Leanne Yinusa-Nyahkoon, clinical assistant professor of occupational therapy, has dedicated her career to understanding health disparities in Black communities. Most recently, her research has focused on addressing adverse pregnancy and birth outcomes affecting Black women (page 12).

While we navigate these unprecedented times, it is important to celebrate successes when they happen. *U.S. News & World Report* released its updated graduate best health schools rankings in March. Our occupational therapy program was recognized once again as #1 in the nation, speech-language pathology improved its ranking to #10, and physical therapy remains a top-tier program at #20. We are now the only university in New England to have three programs in the top 20 on their respective lists.

Next year, Sargent celebrates 140 years since its founding in 1881 (page 8). Throughout our history, we’ve pursued innovative academic and clinical programs, developed cutting-edge research, and attracted standout faculty. This year, we introduced our third named professorship, aptly named for our founder, Dudley Allen Sargent. And while much has changed in the last 140 years, we remain committed to the same values Sargent advocated when he founded our college more than a century ago—improving the health of all individuals by driving innovations in health and ensuring healthcare equity and access for all.

Best wishes,

Christopher A. Moore  
Dean and Professor,  
@SARDeanBU

# SPEECH AND PARKINSON'S

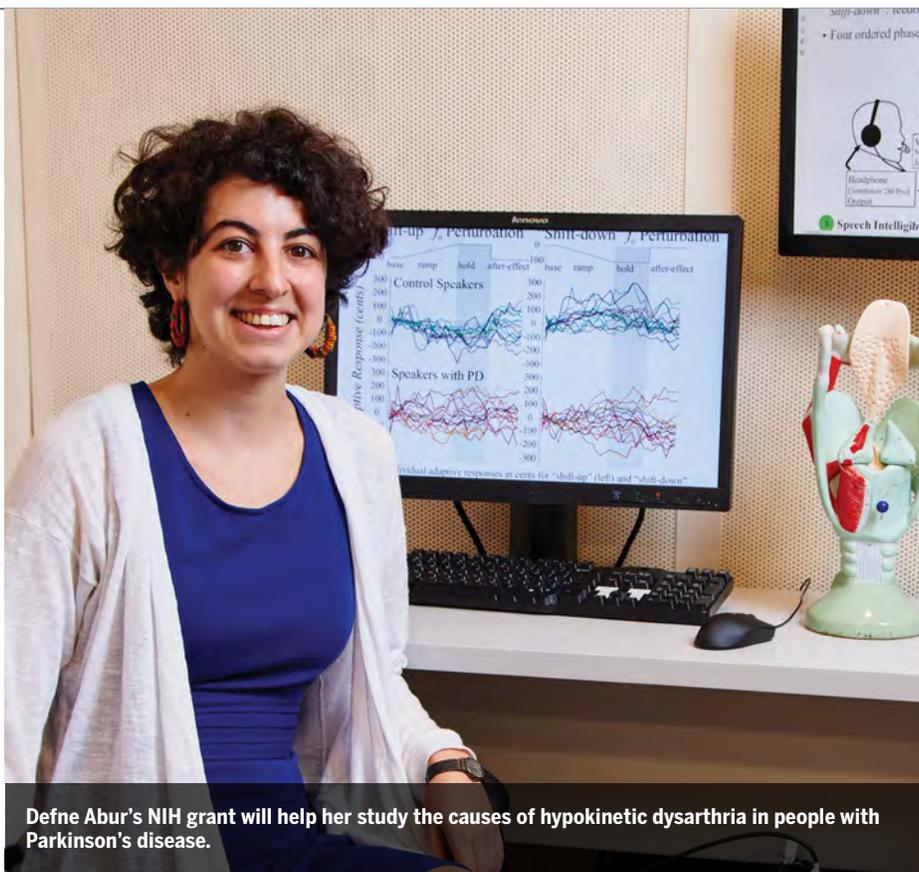
DOCTORAL STUDENT DEFNE ABUR WON A MAJOR NIH GRANT TO STUDY SPEECH DISORDERS IN PEOPLE WITH PARKINSON'S DISEASE

AROUND 90 PERCENT OF PEOPLE WITH PARKINSON'S DISEASE ALSO HAVE A motor speech disorder called hypokinetic dysarthria. They become quieter, more monotone, and their vowels and consonants get rough around the edges. But, says Defne Abur, there's been little work to figure out what causes it and why some patients have different symptoms than others.

Abur ('21), a doctoral student in Associate Professor Cara E. Stepp's sensorimotor rehabilitation engineering lab, hopes to change that. She's starting a three-year study focused on Parkinson's phenotypes, those observable or visible traits—like how someone's voice sounds—caused by a combination of genes and environmental factors. The work will be supported by a grant from the National Institutes of Health's National Institute on Deafness and Other Communication Disorders. Abur, whose goal is to start her own speech disorders research lab, spoke with *Inside Sargent* about her project and how it might help clinicians improve care.

## Your focus will be on motor phenotypes of Parkinson's disease. What are they?

Parkinson's disease consists of very specific changes in motor function, and recent work has suggested that there might be distinct phenotypes. One is related to instability with your posture and difficulty with walking: postural instability and gait difficulty dominant, or PIGD Parkinson's. The second type is primarily tremor related: tremor dominant, or TD Parkinson's. There are certain kinds of speech symptoms that are related to one phenotype and some to the other. So looking at speech



Defne Abur's NIH grant will help her study the causes of hypokinetic dysarthria in people with Parkinson's disease.

symptoms by phenotype might give us more information as to whether the motor changes that are being caused by one are resulting in a very specific speech change. The primary goal of this project is to have a longitudinal study looking at speech changes within the same speakers: to look at one person over time and see how both their motor function and their speech changes to try and see if there's a correlation.

## How does this fit into your broader research?

My dissertation work centers on people with motor speech disorders. I have had a focus since my first year on people with Parkinson's disease, and I've been really interested in understanding why speech symptoms develop in people with Parkinson's and how they progress. Another aspect of this grant is looking at functional speech outcomes. If someone's speech is changing longitudinally in

a large way according to our acoustic measure, we don't know if that's actually impactful unless we have some measure of how it affects their daily life.

## How might your findings eventually benefit clinicians working with people with Parkinson's?

Speech changes haven't been examined with respect to the phenotype, so this is the first work that will be looking at how specific motor changes might relate to specific speech symptom development. That would then inform speech therapy: clinicians would know that when someone presents with specific motor changes, they're likely to see a particular speech symptom develop. —Andrew Thurston



WebExtra

Read an expanded version of this interview at [bu.edu/sargent/inside-sargent](http://bu.edu/sargent/inside-sargent).

## SARGENT SHINES IN NEW RANKINGS

Once again, Sargent College's graduate programs have been named among the best in the country in the *U.S. News & World Report* rankings.

The occupational therapy program retained its first-place position, tying for the top spot among 198 programs. Sargent's program has been number

one in three of the four most recent rankings. "This ranking is a tribute to our outstanding faculty and the creative, talented students we have the privilege to work with," says Wendy Coster, professor and chair of the occupational therapy department.

Meanwhile, the speech-language pathology program jumped two spots and is now ranked 10th out of 261 accredited programs. Sargent's

physical therapy program also ranked highly at 20th out of 239.

"It's gratifying to have such a dedicated team committed to our mission of delivering world-class education," says Dean Christopher A. Moore. "And while rankings are just one measure of our tremendous efforts, it's validating that our peers continue to rank Sargent as a national leader in education, research, and practice." —*Mara Sassoon*

## IN MEMORIAM



During her collegiate career, **Mary Pratt** made every team she tried out for, competing in basketball, softball, fistball, volleyball, lacrosse, field

hockey, sailing, tennis, and archery. She went on to become an advocate for women in sports.

Pratt ('40) was also an original member of the Rockford Peaches, a team in the All-American Girls Professional Baseball League during World War II. The league was featured in the 1992 hit film *A League of Their Own*, starring Geena Davis (CFA'79, Hon.'99). A BU Athletic Hall of Fame inductee, Pratt died on May 6, 2020. She was 101.

Born in Bridgeport, Conn., in 1918, Pratt moved to Quincy, Mass., in 1932 and earned a degree in physical education from Sargent. After her professional athletic career ended, she remained devoted to sports, as a teacher, a mentor, and an advocate. She taught for more than 40 years and, in 1986, cofounded New Agenda-Northeast, which helps create athletic opportunities for women.



**Linda Duncombe** ('72, Wheelock'02) joined the occupational therapy faculty at Sargent College in 1974 and remained in that role until retiring in 2009. She died

in July at the age of 73.

From 1991 until her retirement, Duncombe was the academic fieldwork coordinator for the occupational therapy professional-entry programs, responsible for securing and maintaining relationships with clinical sites across the US and matching students with placements. In this role, she interacted with every student (sometimes more than 100 a year) at a crucial point in their professional education, and she was dedicated to their success. She remembered many of them even years after they graduated and moved on in their careers.

She was also dedicated to supporting fieldwork clinical supervisors to provide effective guidance to their students. This work continued after retirement as she served as a certified fieldwork educator for the American Occupational Therapy Association.



Over his 40-year career as a psychologist, **William A. Anthony** was often referred to as the "Father of Psychiatric Rehabilitation" for his lifetime of

advocating, teaching, training, and conducting research for people who live with mental health conditions. In 1979, he founded the BU Center for Psychiatric Rehabilitation at Sargent College and served as its executive director until his retirement in 2011. Anthony died on July 15, 2020, at the age of 77.

Anthony began his career at Walter Reed Army Hospital where he saw that veterans with PTSD and other mental health conditions were not receiving the same care as veterans with physical wounds. He challenged the mental health and rehabilitation fields to invest in recovery and to transform their people, programs, and systems in order to improve the lives of individuals with mental health challenges. In 1992, he received the Distinguished Service Award from President George H. W. Bush (Hon.'89) for his efforts.

## AWARDS AND HONORS

### HEALTH SCIENCES

**Joan Salge Blake**, clinical professor of nutrition, received the Media Excellence Award from the Academy of Nutrition and Dietetics (AND).

**Leslie Caiola** ('21) was named the 2020 Outstanding Dietetics Student by AND.

**Michele DeBiase**, clinical associate professor of nutrition, received a Diversity & Inclusion Promotion Grant from AND.

**Maura Walker**, research assistant professor of nutrition, received a Career Development Award from the American Heart Association.

### OCCUPATIONAL THERAPY

**Wendy Coster**, professor of occupational therapy, received the American Occupational Therapy Association (AOTA)/American Occupational Therapy Foundation (AOTF) joint Presidents' Award.

Occupational therapy professors **Ellen Cohn**, **Wendy Coster**, and **Gael Orsmond** received the Community Partner Award from MAB Community Services/Ivy Street School.

**Karen Jacobs**, associate dean for digital learning and innovation and clinical professor of occupational therapy, received the Outstanding Mentor Award from AOTA.

**Robin Newman**, clinical assistant professor of occupational therapy, was named to the AOTA Roster of Fellows.

**Elizabeth Schmidt**, postdoctoral associate, received a Switzer Research Fellowship from the National Institute on Disability, Independent Living, and Rehabilitation Research.

### PHYSICAL THERAPY

**Terry Ellis**, associate professor of physical therapy and director of the BU Center for Neurorehabilitation, was named a Catherine Worthingham Fellow by the

American Physical Therapy Association.

**Tim Nordahl**, physical therapist in the BU Center for Neurorehabilitation, was elected to the board of the Academy of Neurologic Physical Therapy.

**Michael Lopez** ('18,'20) received the American Physical Therapy Association Massachusetts Chapter Ruth Hall Award.

### SPEECH, LANGUAGE, AND HEARING SCIENCES

**Swathi Kiran** was named the inaugural James and Cecilia Tse Ying Professor in Neurorehabilitation at Sargent College.

**Defne Abur** ('21) and **Natalie Gilmore** ('20), speech, language, and hearing sciences PhD students, received New Century Scholars Doctoral Scholarships from the American Speech-Language-Hearing Foundation.

**Abur** also received an NIH/NIDCD grant for her work on motor phenotypes of Parkinson's disease (see page 3).



**Travis Roy (1975–2020)**, the former BU hockey player who was paralyzed from the neck down in an on-ice accident in 1995, died on October 29 from complications due to his spinal injury. Roy, who went on to graduate from BU, write a book about his experience, and found the Travis Roy Foundation, had a long relationship with the Sargent College community. He worked on his recovery and rehabilitation at Sargent and, in 2015, anonymous donors endowed a new position: the Travis M. Roy Professor in Rehabilitation Sciences. Read more about Roy's relationship with Sargent College at [bu.edu/sargent/sargent-mourns-the-loss-of-travis-roy](http://bu.edu/sargent/sargent-mourns-the-loss-of-travis-roy).

## NEW FACULTY & PROMOTIONS

### NEW FACULTY

**Anne Carney**, lecturer, speech, language, and hearing sciences

**Rachael Kammer**, clinical assistant professor, speech, language, and hearing sciences

**Jacqueline Lauer**, clinical assistant professor, health sciences

**Sorcha Martin**, clinical assistant professor, physical therapy and athletic training

**Shannon Peters**, lecturer, health sciences

**Tatiana Pontes**, clinical associate professor, occupational therapy

**Lisa Roberts**, lecturer, health sciences

**Jennifer Zuk**, assistant professor, speech, language, and hearing sciences



New faculty members include (left to right, from the top) Anne Carney, Rachael Kammer, Jacqueline Lauer, Sorcha Martin, Shannon Peters, Tatiana Pontes, Lisa Roberts, and Jennifer Zuk.

### PROMOTIONS

**Michele DeBiase**, clinical associate professor, nutrition

**Jennifer Kaldenberg**, clinical associate professor, occupational therapy

**Tyler Perrachione**, associate professor, speech, language, and hearing sciences

**Kelly Pesanelli**, senior lecturer, health sciences

**Gael Orsmond**, professor, occupational therapy

## LISTEN TO THE SCIENCE

### AS A LONGTIME SARGENT COLLEGE FACULTY MEMBER,

Karen Jacobs is immersed in the groundbreaking research and clinical work of the school's faculty, staff, and students. But the clinical professor of occupational therapy wanted to bring that work to a broader public audience, so she launched a podcast—and she's not the only Sargent professor doing so.

Jacobs, the college's associate dean for digital learning and innovation, created *HealthMatters@BUSargent*, a 20-minute podcast that provides a window into the college's interdisciplinary research and clinical expertise.

"It's about everybody's work and for listeners to really understand what our college is like," Jacobs says. In addition to groundbreaking research in the fields of occupational therapy, physical therapy, speech, language, and hearing sciences, global health, neuroscience, and nutrition, Sargent is a hub for research on health outcome disparities related to fac-

tors such as gender, race, wealth, and zip code, as well as the chronic challenges that come with aging and child development.

The podcast's themes range widely. The inaugural episode featured a conversation about the origins of dyslexia and the role of evolution in brain development. For a June episode, three occupational therapy students discussed dismantling institutional racism.

Jacobs plans on broadening the scope of the podcast, using it as a catalyst to foster collaboration between Sargent and other colleges on campus.

Preceding Jacobs into the podcast studio was another Sargent professor hoping to make a difference—clinical professor of nutrition Joan Salge Blake. Each year, Salge Blake says her students have more questions than ever about topics not covered in the textbook. That's why she launched her podcast, *Spot On!*, in January 2019 and began its fourth season in September.

Salge Blake focuses on health and wellness stories in headlines and



Karen Jacobs (left) chats with a producer, Nicole Chen (COM'22), before recording a new episode.

students' social media feeds, offering research-based health information that helps listeners separate fact from the fiction that bombards them online. She encourages students to think critically—and reminds them that a keto diet cookie can't replace the joy of meals with friends or foods that remind them of home.

"Do you really want to get your health and wellness information from 'Dr. Kardashian'?" she asks. —Meg Woolhouse

### WebExtra

*HealthMatters@BUSargent* and *Spot On!* are available on multiple podcast platforms. Visit [anchor.fm/healthmatters](https://anchor.fm/healthmatters) and [anchor.fm/spoton](https://anchor.fm/spoton) for more information.

The soft exosuit helps mobility and movement for people suffering from lower back pain, aiding them in activities such as heavy lifting.

# Pain Relief You Can Wear

## COULD ROBOTIC APPAREL REPLACE OPIOIDS FOR BACK PAIN?

**S**ixteen million Americans—8 percent of the adult population—suffer persistent back pain. Many more visit their doctor for the occasional twinge. According to a 2018 study in *JAMA*, low back pain is one of the most common reasons given for prescribing opioids. That's fueling the opioid crisis—and there's little evidence the powerful painkillers even help.

“Chronic low back pain is often debilitating,” says Lou Awad, an assistant professor of physical therapy. “Many turn to opioids to help manage the pain, but mistake short-term relief for a long-term cure. Unfortunately, long-term opioid therapies can cause serious problems. Perhaps more importantly, the underlying cause of the pain is never addressed.”

The solution, he says, might not be a pill you swallow—it might be something you wear.

Awad researches and develops robotic apparel, battery-powered exosuits that make mobility and movement easier for patients who have had a stroke. He's now coleading a clinical team developing similar technology for people with back pain. The work is funded by a five-year, \$2.8 million grant from the National Institutes of Health as part of its Helping to End Addiction Long-term Initiative (HEAL), an all-out effort to find better treatments for pain and the opioid abuse it can spawn.

“The robotic apparel consists of cables that apply mechanical forces in parallel with the underlying muscles,” Awad says. “The system is designed to be worn like a backpack,

with attachments over the shoulder, around the waist, and also around the thighs. It is very unobtrusive.”

When the power's off, the wearer can move, bend, and reach without any restriction. Hit the “on” button, and the device “responds to the speed and motion of the user to adaptively help lift and hold objects,” Awad says. Meanwhile, its sensors monitor the wearers' movements, recording diagnostic data for their physical therapist and offering biofeedback for them, showing “how to move in a way that may reduce their pain and increase their function.”

Getting help from a physical therapist has been shown to help with pain while reducing reliance on opioids, says Awad. “The robotic technology that we are advancing has a lot of potential to enhance a physical therapist's ability to assess and treat low back pain.”

The exosuit will be tested at the BU Physical Therapy Center in the Ryan Center after the study team's physical therapists and engineers complete modifications, says Diane Dalton, coleader of the clinical team and a clinical associate professor of physical therapy and athletic training. The Sargent team is collaborating with Harvard's Conor Walsh, an adjunct associate professor at Sargent, who leads the engineering side of the research. “Eventually, we will begin testing its use by people with low back pain as part of a clinical trial,” Dalton says. That testing has been held up due to the COVID-19 pandemic, but Dalton can't wait to begin. “This is exciting technology.” —*Rich Barlow*

### ➔ WebExtra

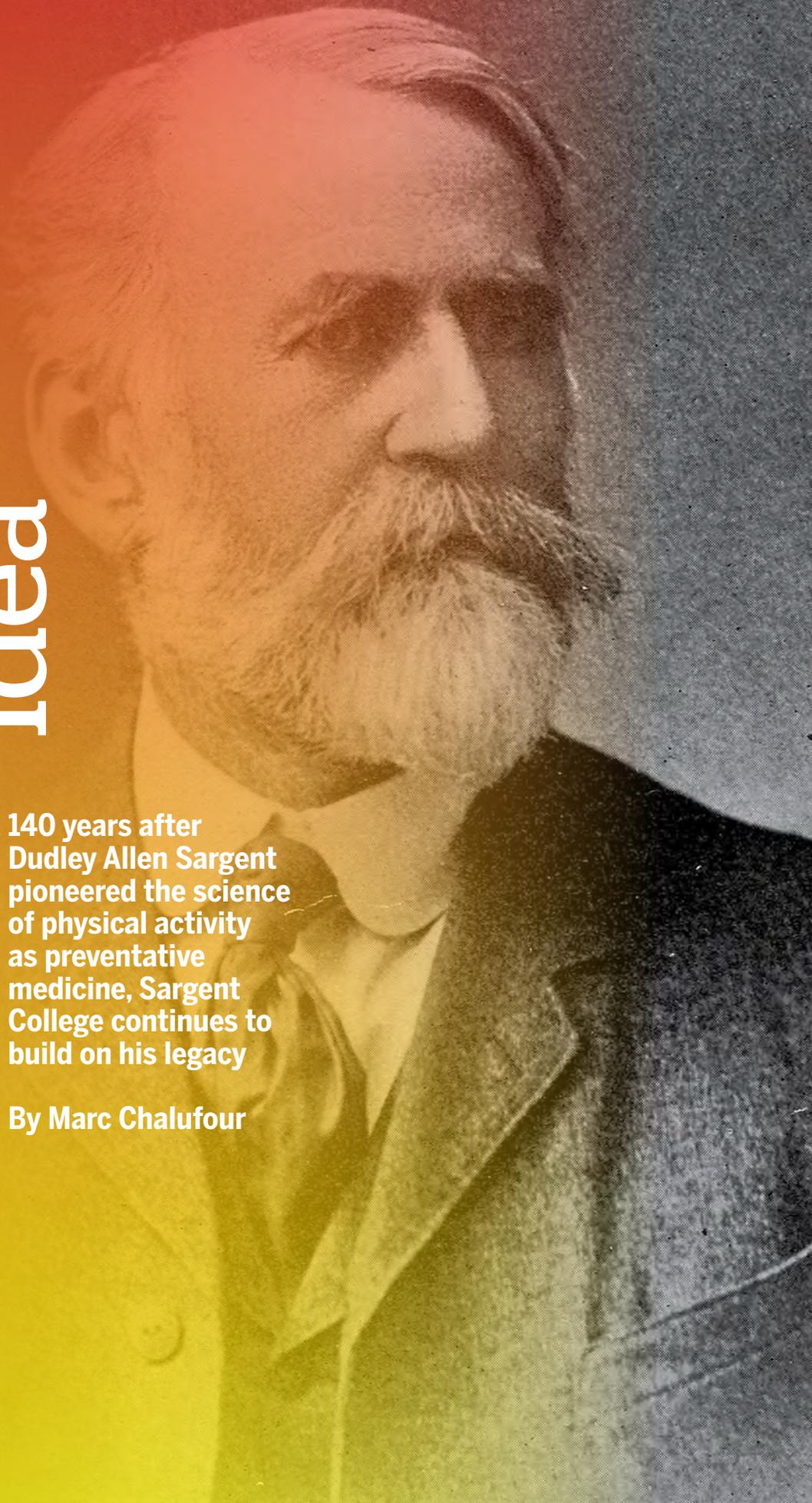
A major clinical trial has shown that the exosuit can be a safe and effective tool for the lower limb rehabilitation of survivors of stroke. Read more at [bu.edu/sargent/inside-sargent](https://bu.edu/sargent/inside-sargent).

# A REVOLUTIONARY

## Idea

140 years after Dudley Allen Sargent pioneered the science of physical activity as preventative medicine, Sargent College continues to build on his legacy

By Marc Chalufour



**D**udley Allen Sargent was a 30-year-old physician with a revolutionary vision when Harvard University recruited him in 1880. The university's president wanted him to manage its new Hemenway Gymnasium and teach physical training to the students—a pursuit traditionally limited to the school's athletes. Members of the faculty and board of overseers opposed the move: exercise, in their minds, wasn't a serious academic discipline.

Sargent, however, took it very seriously. He considered physical activity to be the means for maintaining health and improving functional capacity for anyone, with or without a disability, and he brought a scientific rigor to his work. It was an approach to preventative and rehabilitative care he'd hit upon during medical school and would carry throughout his life. The Harvard appointment would give him a platform to share, with an international audience, his application of anatomy and physiology to physical fitness. And to found what would eventually become BU College of Health & Rehabilitation Sciences: Sargent College. "The crying need of the hour is to get educators to recognize the fundamental importance of all forms of physical training and bodily activity," he wrote in 1906.

Sargent was more than an innovative educator and researcher, however. He was also ahead of his time in encouraging the participation of all, regardless of ability, gender, or race.

"The most important part of Dudley Allen Sargent's legacy is his philosophy of inclusion, his understanding that there's a place for everyone to participate to their full ability and their full ambition," says Sargent College's dean, Christopher Moore. "It was incredibly sophisticated. He was ahead of his time."

Almost a century after his death, the college bearing his name represents a realization of his vision that he couldn't possibly have imagined. But from the lab to the classroom to the culture, Sargent College continues to follow its founder's lead.

### A NEW APPROACH

Just before joining Harvard, Sargent had opened his own gym in New York City, bringing his ideas to life by helping men, women, and children improve their health through physical activity. Sargent's version of a gym, however, was as much a medical practice and research lab as it was a fitness center. He collected a wealth of data, measuring his clients' bodies and movements, then prescribing exercises based on any weaknesses he detected. He also visited clinics around the city to learn how people with different disabilities and illnesses responded to physical training.

While his medical school peers opened traditional physician offices, consulting with patients and prescribing drugs, Sargent remained steadfast in his pursuit of a new approach. "I had seen a gleam that I must follow, and that gleam was preventive medicine," he wrote. He told a reporter for the *New York Daily Herald*, "I assume the same responsibility for my pupils that the physician does for his patients." The appointment at Harvard gave Sargent a far greater reach.

"Colleges, universities, schools, hospitals, medical clinics, and other public and private institutions throughout the country and in foreign lands called upon him to provide

“The most important part of Dudley Allen Sargent's legacy is his philosophy of inclusion, his understanding that there's a place for everyone to participate to their full ability and their full ambition. It was incredibly sophisticated. He was ahead of his time.”

—CHRISTOPHER MOORE,  
DEAN OF SARGENT COLLEGE



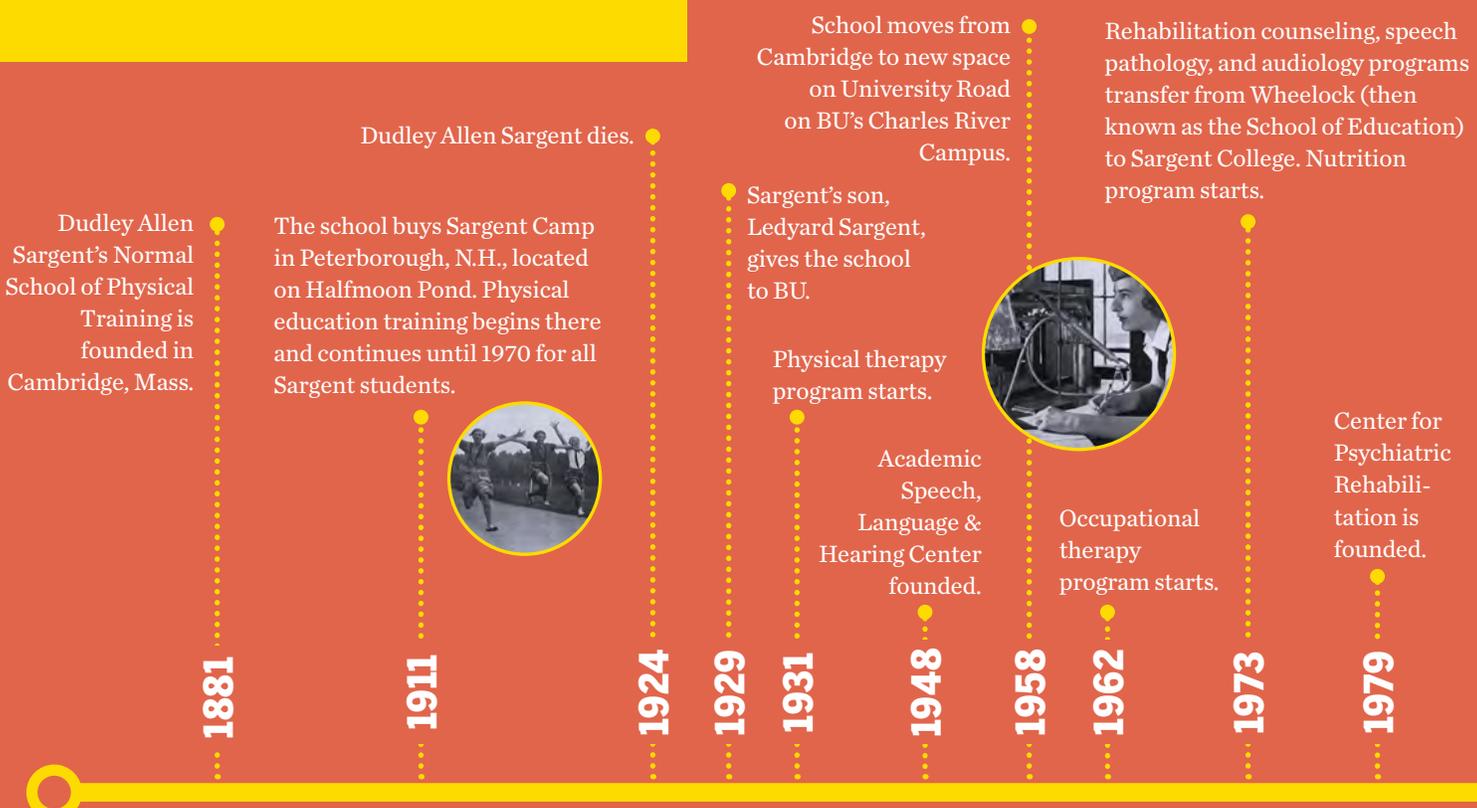
George Makechnie, pictured above with two students in 1954, served as Sargent's dean from 1945–1972. His history of the college, *Optimal Health: The Quest*, details Sargent's growth and expansion.

instructors and practitioners trained in his theories and methods,” wrote George Makechnie (Wheelock’29,’31, Hon.’79), dean of Sargent College between 1945 and 1972 and author of a history of the school, *Optimal Health: The Quest*. Sargent pushed his ideas on all fronts—as teacher, trainer, researcher, writer, and even inventor. Training apparatus of his own creation soon filled Hemenway Gymnasium.

Despite his work at Harvard, it was an off-campus project that solidified Sargent’s legacy. One year after arriving in Cambridge, Mass., he received a request from the Harvard Annex (the predecessor to Radcliffe College) to offer courses preparing women to teach physical education. Sargent leased a space and, in 1881, welcomed six students into the inaugural class at his Normal School of Physical Training (a normal school, in the 1800s, was a school that trained teachers).

Enrollment in the school’s two-year course of study grew steadily. By the time of Sargent’s death, in 1924, obituaries suggest that his work was finally being recognized. The *American Physical Education Review* published a series of tributes, with peers calling him “the dean of physical education” and crediting him with undertaking “one of the first endeavors to turn physical training into scientific paths.” The *Boston Globe* wrote that Sargent’s students had spread his teachings across North America and Europe. A broader allied health movement was also beginning to foster specialized and diversified disciplines like physical therapy with similar goals. With that came the demand for corresponding academic credentials.

BOSTON UNIVERSITY PHOTOGRAPHY (MAKECHNIE, 1911, 1958)



When Ledyard Sargent took over the school from his father in 1921, one of his first major decisions was to partner with Boston University so his students could earn a bachelor of science in education. Then, in 1929, Ledyard took an additional step to ensure his father’s legacy, giving the entire school, with its 40-person faculty and 400 students, to BU, where it initially joined its school of education.

**A PERMANENT HOME**

Five years later, recognizing that the school was growing and evolving, BU established Boston University Sargent College of Physical Education.

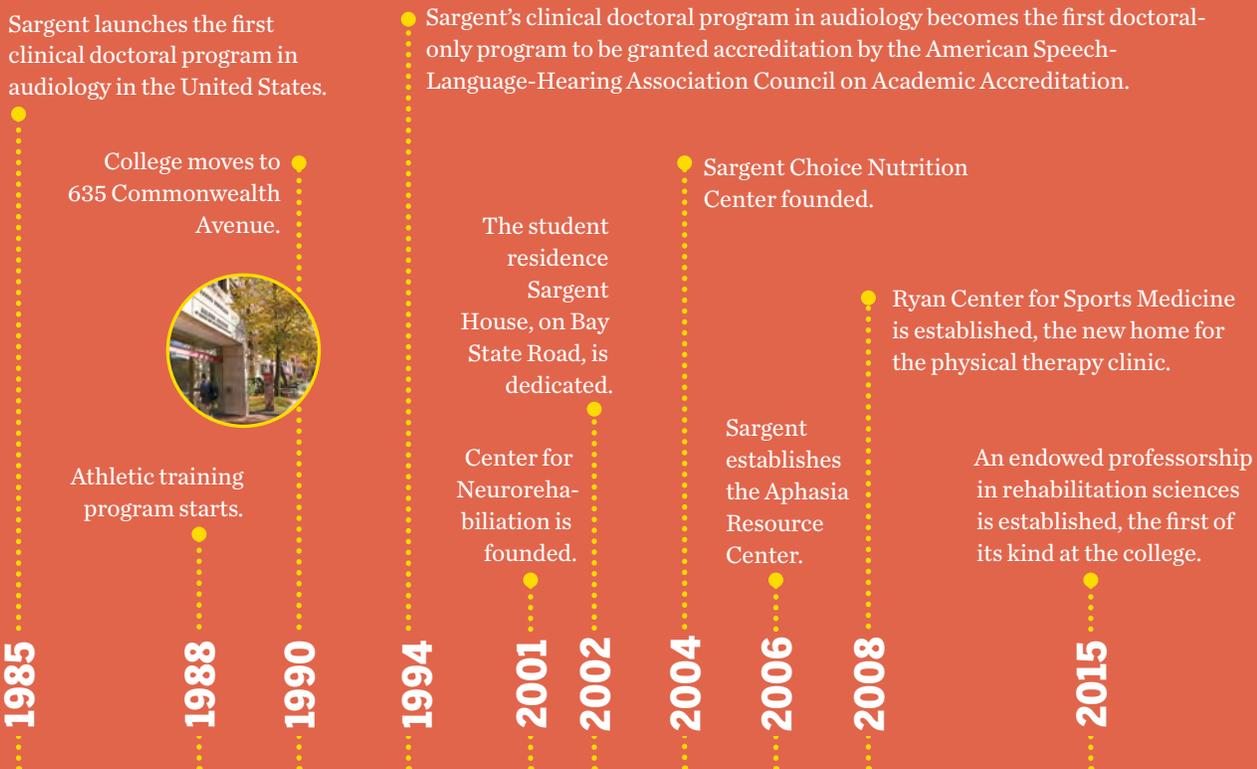
When the college added a dedicated physical therapy program in 1931, it marked the start of a decades-long period of growth and expansion that further shaped and defined the modern Sargent College. Future additions included the physical therapy clinic, which now resides in BU’s Ryan Center for Sports Medicine, in 1959, and an occupational therapy program in 1962. The 1970s brought new programs in nutrition, speech pathology, and audiology, as well as the Center for Psychiatric Rehabilitation. In recent years, the college has established three named professorships, renovated the Ryan Center, and attracted millions in research funding—faculty brought in \$18 million in the past year alone. Today, the college is recognized as one of the best in the country: *U.S. News & World Report* recently named the occupational therapy program as the top in the nation, and also ranked speech-language pathology and physical therapy among the best.

Moore says D. A. Sargent’s revolutionary vision laid the foundation for all the work happening at the college today. In some cases, he says, it took the world decades to catch up to his ideas. The World Health Organization, for example, adopted the International Classification of Functioning, Disability and Health—a model that expanded the treatment of impairments beyond a medical approach to addressing an individual’s ability to participate in activities of daily living—in 2001, more than a century after Sargent pioneered that philosophy. His individualized method of patient care and use of physical training to enhance participation in activities of daily living are considered direct predecessors to physical therapy and occupational therapy.

“We are realizing his vision,” says Moore. “D. A. Sargent was human-centered. He was data driven. He helped people achieve what they wanted to achieve by whatever means were available. That interactive collaboration between the healthcare provider and the patient was a revolutionary idea.”

The college’s culture also comes from its founder’s influence. A small, close-knit school for decades before joining a large research university, Sargent strives to maintain some of that identity today. “A human centeredness is our real identifying characteristic,” Moore says. “All of our programs are focused singularly on improving the human condition.”

Students come to Sargent for a very particular experience, but they often don’t know how it came to be that way. Moore hopes that can change: “D. A. Sargent’s story really shrinks history. It’s the continuous thread through the college’s history.” ■



# CLOSING THE GAP

**OCCUPATIONAL THERAPIST LEANNE YINUSA-NYAHKOON HAS DEDICATED HER CAREER TO UNDERSTANDING PRECONCEPTION AND PRENATAL HEALTH INEQUITIES IN BLACK COMMUNITIES**

**BY JORI FORTSON**



Leanne Yinusa-Nyahkoon studies how adverse pregnancy and birth outcomes affect Black women. She's also a mother herself.

**B**lack women have long faced higher odds of pregnancy and delivery complications—and many have died as a result. In 2018, the issue received headlines when two celebrities experienced life-threatening childbirth complications: professional tennis player Serena Williams developed blood clots in her lungs following an emergency C-section while superstar singer Beyoncé Knowles-Carter was on bed rest due to pre-eclampsia prior to her own emergency C-section.

Alarming stories like Knowles-Carter's and Williams' are more than familiar to Leanne Yinusa-Nyahkoon, a clinical assistant professor of occupational therapy who has devoted her career to health disparities research.

Yinusa-Nyahkoon (CGS'98, Sargent'01,'03,'09) began her career in pediatric occupational therapy serving diverse urban communities. Early on, she noticed the children she treated were predominantly Black. She wondered, "Is this just a coincidence that all these children have these learning, physical, or intellectual disabilities? Or, is there an underlying factor?"

During her doctoral studies at Sargent, Yinusa-Nyahkoon investigated the ecological barriers contributing to racial disparities in childhood asthma.

She uncovered a common, underlying thread of social forces that include systemic racism, discrimination and judgment from healthcare providers, and clients feeling alienated within healthcare settings. Those findings launched a career devoted to studying health disparities that disproportionately affect urban Black communities.

## A FAMILIAR CHALLENGE

After graduating with her doctoral degree, Yinusa-Nyahkoon shifted her focus—slightly. “The opportunity arose to do similar work, but to look at birth outcomes and the factors that have plagued Black women for decades,” she says.

Pregnancy and birth outcomes, including maternal mortality, preterm birth, low birthweight, and infant mortality, disproportionately afflict Black mothers and babies in the United States. After studying developmental disabilities and asthma, examining birth outcomes “was just continuing the thread,” says Yinusa-Nyahkoon. “It’s still the same underlying factors.”

Yinusa-Nyahkoon says her work is guided by the American Occupational Therapy Association’s Occupational Therapy Practice Framework, which emphasizes addressing the natural and physical environment. It also encompasses attitudes, products and technology, support and relationships, and services, systems, and policies. “It’s not just about the environment in your home or the physical structures that surround you. But really, in the social environment that you interact with every day,” Yinusa-Nyahkoon says. Income and educational inequities, the criminal justice system, racist housing policies, poor infrastructure in neighborhoods, and the dearth of Black healthcare providers are some of the many social factors that lead to disparities in maternal, infant, and child health. These forces, she says, contribute to young Black women having little to no access to needed products and technology, inadequate supports and relationships, skeptical attitudes about healthcare, and services, systems, and policies that were designed without them in mind.

## MEET GABBY

Yinusa-Nyahkoon’s opportunity to study birth outcomes came in 2009, when she joined the Gabby System project. Gabby is an embodied conversational agent: an animated, virtual character that assesses the health of young Black women and delivers evidence-based health information to address individual needs and guide health behavior change. When the program first launched, the Gabby team recruited Black women who were healthcare providers or students in health professions to test the system. “We really needed someone with some perspective about health to give us concrete information about what to add, what to fix, and how to tweak it,” Yinusa-Nyahkoon says. Gabby is now being implemented in 12 urban and rural communities across the United States.

The system was created and is managed by Brian Jack, professor of family medicine at the BU School of Medicine (MED), and a team at Boston Medical Center and MED, in collaboration with the Relational Agents Group at Northeastern University’s Khoury College of Computer Sciences.

One of the motivating factors for creating Gabby is that prenatal care may be addressing maternal and infant health too late. Health behavior change often takes longer than the prenatal period, and according to the United Health Foundation’s *America’s Health Rankings*, an estimated 30–45 percent of pregnancies are unintended or mistimed. That means that the preconception care provided by the Gabby System presents an opportunity to intervene during a critical window.

The goal of the Gabby System is to improve young Black women’s overall health and the likelihood of having a healthy pregnancy and delivery. “The point of Gabby is not to replace the provider, but to facilitate conversation and fill in the gaps in the clinical encounter,” Yinusa-Nyahkoon says. It empowers women and “provides them with evidence-based information to get them thinking about their health or potential questions they could ask providers.”

“One of the key strengths of Gabby is how comprehensive it is,” says Kylie Woodall (’21), an occupational therapy doctoral student on Yinusa-Nyahkoon’s research team. “There’s over 100 different factors that it can assess for, and then it has the ability to figure out which factors may be most relevant.”

The program is currently focused on three main birth outcomes: infant mortality, preterm birth, and low birthweight. “We’re making a transition to also focus on maternal mortality, because those numbers are appalling,” Yinusa-Nyahkoon says.

In the United States, Black women are currently three to four times more likely to die of pregnancy or delivery complications than white women. These stark disparities in adverse birth outcomes are inextricably linked to implicit bias and poorer quality of medical care. The healthcare field needs “to recognize that anti-Black racism, not race, is the driving factor behind these health inequities and that this health crisis cannot be addressed without critically working to examine and dismantle racism and bias in healthcare and society at large,” says Woodall.

Adverse birth outcomes among Black women are also linked to stress caused by the cumulative impact of repeated exposure to racial discrimination, commonly known as weathering.

“A huge contributing factor is a lifetime of stress and just the burden, to be very frank, of being Black in America,” Yinusa-Nyahkoon says. “That just weighs on the body’s system and unfortunately affects birth outcomes.” This complex problem even extends across income and education levels. “Recent data tell us that the worst stats are of Black women who have a master’s degree or higher, which negates the argument that it’s just a socioeconomic issue,” she says.

Yinusa-Nyahkoon’s interest in this research is, in part, personal. “As a woman who identifies as Black and has given birth four times, I feel the burden and I felt the pressure every time because I knew my outcome was never supposed to be good,” she says. “I would like all of us, in light of COVID-19, in light of Black Lives Matter, to actively demonstrate that, from the womb, Black lives do matter. We all need to work toward creating equitable outcomes.” ■



**ON THE**

# FRONT

# LINES

Emily Sanchez (middle row, far right) was mobilized to New York City when COVID-19 spiked in the city.

**IN THE MIDST OF THE COVID-19 PANDEMIC, WHEN MOST PEOPLE WERE HUNKERED DOWN IN THEIR HOMES AND apartments, healthcare professionals accustomed to providing important routine care and rehabilitation were pulled into service on the front lines. Here are five stories of Sargent students and alums helping in the fight against coronavirus.**

**C**ONTACT TRACING HAS BEEN LAUDED AS A KEY TOOL IN THE EFFORT TO STOP THE SPREAD OF the novel coronavirus, breaking the chains of transmission and preventing infection surges by identifying and helping those potentially exposed to the disease. It's also one of the oldest public health tactics around: the Boston Public Health Commission (BPHC) Infectious Disease Bureau—founded in 1799 and initially led by Paul Revere—has used it to control the spread of diseases like cholera and tuberculosis. When the volume of cases from the COVID-19 pandemic overwhelmed the small nurse-staffed office, officials reached out to Boston's higher ed community for help.

Shelley Brown, a clinical assistant professor of health sciences, emailed a group of her students, including those who'd lost internships because of the pandemic. Within two hours, more than 30 students had responded, and 10 ultimately volunteered.

The BU volunteers each made 25 to 30 calls a day during six-hour shifts at BPHC's Dorchester offices. The city offered scripts to the contact tracers, but most participants say their real-life conversations took freewheeling twists and turns. Natalia Kelley (CAS'22, Sargent'22) says she tried to let her calls unfold like conversations to build a sense of trust before asking people intimate questions about their symptoms and recent personal interactions. But it wasn't always easy. One woman was angry that the city received information about her positive diagnosis. Others shared their symptoms in graphic detail. In fact, many were comfortable right away talking about their health symptoms, whether diarrhea, excess phlegm or mucus, or other less-than-pleasant topics, because they wanted to help the city's efforts to curb the virus' spread.

The contact tracing effort also helped record the demographics of Boston's infected population, which contributed to broader information nationally. According to the COVID Racial Data Tracker, a collaboration between the COVID Tracking Project and the BU Center for Antiracist Research, Black Americans are dying from COVID-19 at a rate almost 2.5 times greater than white Americans. Latinx people are dying at a rate 1.3 times greater.

Some of McKenzie Beaton's calls were to Spanish-speaking immigrants—many of whom were not getting needed health-care services before the coronavirus or fact-based information during it. Beaton ('20, SPH'20), who is bilingual, says many of the people she spoke with were living in small or crowded apartments and struggled to avoid contaminating others. "This systemic inequality—I've been studying it for four years," she says. "It's a really hard pill to swallow." —Meg Woolhouse



Rinka Murakami ('20, SPH'20), above, was one of 10 students to volunteer as a contact tracer at the Boston Public Health Commission Infectious Disease Bureau.

# THE CONTACT TRACERS



COURTESY OF EMILY SANCHEZ (OPPOSITE PAGE); COURTESY OF RINKA MURAKAMI (THIS PAGE)

# THE ORGANIZER

**W**HEN THE PANDEMIC HIT BOSTON, UMA KHEMRAJ ('21) LEARNED THAT MANY OF THE city's homeless shelters were struggling to obtain hand sanitizer. The shortage was so severe that, by late March, even 25 percent of healthcare facilities were almost out of hand sanitizer, according to an Association for Professionals in Infection Control and Epidemiology survey. The founder of a student club focused on healthcare advocacy, Khemraj decided to take action.

She had started Healthcare Improvement, Inc., in January, after taking a health and human rights course at BU School of Public Health. The organization's aim is to advocate for improved healthcare at all levels of government, with an emphasis on human rights—and the COVID-19 pandemic provided an immediate focus. "It's unacceptable that there were so many people disproportionately affected by the virus because of their socioeconomic circumstances," says Khemraj. So she put out a call to local businesses and schools for sanitizer donations.

By late April, the organization had collected around seven gallons of hand sanitizer from Short Path Distillery in Everett, Mass., and GrandTen Distilling in Boston, as well as students from BU and other universities.

Khemraj personally delivered the donations to Boston Rescue Mission, Boston Health Care for the Homeless Program, and Haley House. "There were so many people lining the streets without masks and without gloves," says Khemraj of her visit to the Boston Rescue Mission. "That really made an impact on me."

It inspired her to research additional ways to support those disproportionately impacted by the pandemic, focusing on other critical health resources. One of her next goals is to publish a journal about the intersection of economics, public health, and medicine.

"It's all about getting the word out," she says. "We can really make a difference here if enough people know and if enough people care." —*Jacob Gurvis*



Shortly after establishing a healthcare advocacy club, Uma Khemraj (above and below, right) decided its first project would be collecting hand sanitizer for Boston's homeless community.



# THE MANAGER



## **I**N MARCH, AS BOSTON'S CORONAVIRUS CASES BEGAN TICKING HIGHER AND HIGHER, THE CITY'S HOSPITALS

were stretched thin. With elective and routine appointments put on hold, Beth Israel Deaconess Medical Center (BIDMC) was one of those that asked for staff volunteers prepared to switch to frontline care. Lauren Tamburello was quick to raise her hand. “My boss was not surprised,” she says. “She knows I like to be in the action.”

A program manager at BIDMC's Division of Urology, Tamburello ('15, SPH'17) typically works to improve processes and programs that enhance the patient experience. In mid-March, she was redeployed and assigned as a site manager at BIDMC's ambulatory COVID-19 testing site. There, she handles the day-to-day operations of the hospital's outdoor, drive-through location, where a team of nurses, medical assistants, and other

allied health professionals—including occupational therapists, audiologists, and radiation technologists—perform the nasopharyngeal swab test.

In managing the testing site, Tamburello has had to

quickly adapt to changes in hours, testing guidelines, staffing, and even the weather. As of mid-August, the site—which operates seven days a week and, on the busiest days, tests more than 100 patients—had administered more than 15,000 tests.

“Our team is doing a fantastic job of taking care of our patients,” Tamburello says. But, she adds, it's been emotionally and physically exhausting. “I've seen staff who are having a difficult time working in this COVID testing environment when they've lost loved ones to the virus. I've seen staff members who are ‘swabbers’ or work in the test scheduling office who are concerned because they have little ones at home,” she says. “It's been one of the hardest and most challenging things I've had to do in my career, but also the most rewarding.” —*Mara Sassoon*

**“IT'S BEEN ONE OF THE HARDEST AND MOST CHALLENGING THINGS I'VE HAD TO DO IN MY CAREER, BUT ALSO THE MOST REWARDING.”**

# THE CAPTAIN



When COVID-19 was spiking in New York City, Emily Sanchez was mobilized to run food service operations at the Javits New York Medical Station (above).

**WHEN EMILY SANCHEZ ('13) GRADUATED, SHE APPLIED FOR THE US MILITARY-BAYLOR Graduate Program in Nutrition in San Antonio, Tex. Despite having no military background, “I really felt like being an army dietitian, I would never get bored,” says Sanchez, who is now a captain. “I would always be challenged and, every couple of years, have to tackle new problems.”**

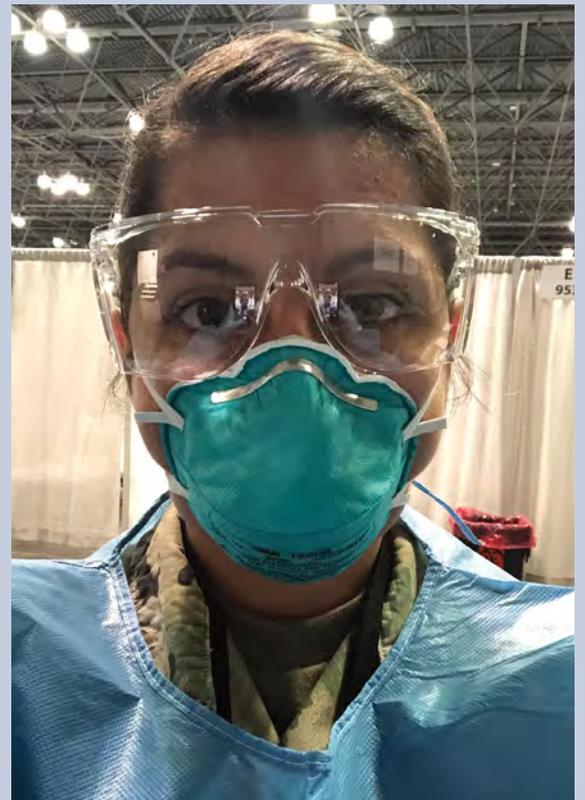
In late March, after seven years of clinical nutrition and dietetic work at army medical centers in Georgia and Texas—most recently as chief of community and outpatient nutrition at the Brooke Army Medical Center in San Antonio—Sanchez received an assignment that would test her nutrition expertise and military experience in new ways. At the height of COVID-19’s initial spike, she was mobilized to run food service operations at the Javits New York Medical Station, a field hospital built in a convention center in Manhattan, which opened March 31.

Sanchez’s primary focus was ensuring that the hospital received all the supplies and food it needed from outside partners—which included more than 40 collaborating agencies. Sanchez also oversaw a team of dietitians and nutrition care specialists, working to provide healthy meals and nutrition services to all patients.

The hospital served more than 1,000 patients by the time it concluded operations on May 1, with Sanchez and her team distributing more than 15,000 meals.

Though her service in New York lasted just five weeks, the community’s support has stuck with Sanchez. She recalls New Yorkers applauding as she and her colleagues returned to their hotel after each 12-hour shift.

“It was a small act of kindness and gratitude,” says Sanchez, “but it meant so much to me and my team, knowing that what we were doing in New York had meaning and affected the people living there every day.” —*Jacob Gurvis*



**T WAS BUSINESS AS USUAL AT THE BOSTON CONVENTION AND EXHIBITION CENTER IN JANUARY 2020: AN AUTO**

show, an RV and camping expo, trade shows. By early April, its typical run of annual meetings and events had been canceled and the sprawling venue turned into a temporary, 1,000-bed field hospital, Boston Hope. Over

the next two months, the hospital would treat hundreds of post-acute COVID-19 patients. And it was Nicolette Maggiolo's job to make sure they all got healthy meals.

From April until June, Maggiolo (’15), a registered dietitian, was the nutrition and food services manager at Boston Hope. She oversaw food service and nutrition counseling for more than 750 patients at the temporary facility, which was built and operated by her employer, HomeBase, a Red Sox Foundation and Massachusetts General Hospital program that provides clinical care and wellness education and support to veterans and their families.

Her role included managing Boston Hope's clinical nutrition staff, helping patients plan for their transition home, and coordinating with the convention center's catering company. Working with a nonmedically trained catering company in an untraditional hospital space provided its challenges. But obstacles aside, Maggiolo says the nutritional health of the hospital's patients was critical to the healing process.

Nothing could fully prepare Maggiolo for such important work, but she was confident her Sargent training would help her rise to the occasion. "I always had such incredible mentors at BU," Maggiolo says. "They always gave me the confidence that no matter where I landed or whatever role I was asked to take on—even if I wasn't totally sure I had the résumé or the exact qualifications for it—that I could do it, and that I could do it well."

Maggiolo called one of those old friends for advice. Emily Sanchez—see previous page—gave Maggiolo her first tour of Sargent, and Maggiolo credits her as the reason she chose BU.

"To call her and collaborate with her and pick her brain and bounce ideas off of her was so, so helpful for me," Maggiolo says.

Looking back, Maggiolo recalls her final day on the job. The staff of Boston Hope formed a tunnel outside the convention center to cheer on the final patients as they were discharged.

"That will forever be a part of me," she says. "I'll always think back to that tunnel and those patients being wheeled out and making their way home after being treated at Boston Hope. That was a really beautiful day." —*Jacob Gurvis*



Nicolette Maggiolo sought advice from another Sargent alum when she took over food services and nutrition counseling for the Boston Hope field hospital (below).

# THE DIETITIAN



A man with a beard, wearing a blue button-down shirt and light-colored pants, sits on a wooden park bench. He is looking down at a smartphone in his hands. The background shows a brick building and green trees.

# Tracking Loneliness

BY ANDREW THURSTON

**A**mericans are lonely. Even before COVID-19 left people stuck at home and cut off from friends, nearly half of adults reported feeling socially isolated, according to a 2018 survey by Cigna and Ipsos. Younger adults were the loneliest of all.

In Sargent's Approach Motivation & Participation Lab, Daniel Fulford is trying to figure out why some people become chronically lonely and to help them reengage with society.

"The subjective experience of aloneness is not only associated with psychological or emotional distress, but poses a risk for a variety of detrimental health outcomes, even including early mortality," says Fulford, an assistant professor of occupational therapy. "Loneliness is thought to serve as an adaptive signal that motivates us to seek social contact, so it can serve a beneficial purpose. But when chronic, there is mounting evidence that these poor health outcomes emerge."

This fall, Fulford began studying social connections in 100 people—some lonely, some not. His goal is to pinpoint what causes someone to tumble from being socially connected to feeling adrift. The research is funded by the National Institute of Mental Health as part of the Smart and Connected Health initiative, a joint project with the National Science Foundation. Fulford has also applied for additional funding to assess the long-term impacts of COVID social distancing measures on loneliness.

## AN INDIVIDUAL EXPERIENCE

"One of the key questions is to understand *within* people how the loneliness and isolation operate," says Fulford, an expert on dysregulated, or impaired, motivation and emotion, especially in people with schizophrenia. His past studies have covered how people assess the rewards of social activity, interpersonal relationships, and positive and negative emotions. "It's not just a group-level understanding of these key constructs. You really have to dive in. We all experience isolation and loneliness differently."

A focus of Fulford's work has been using smartphones to help track loneliness and provide digital interventions that prompt people to join social activities. During the four-year study, he will use an app called Beiwe, developed for biomedical research by Jukka-Pekka Onnela, an associate professor of biostatistics at Harvard and a partner on the project. As participants go about their daily lives, their phones will monitor them, tracking their physical movements, calls, texts, and social media usage.

"It's a background app designed to gather a lot of what we call passive metrics," says Fulford. Rather than constantly interrupting people with surveys about their feelings, the app will simply watch and listen. "That's actually a central question of this grant: We want to see if we can use the cell phone to gather data in a more passive way, to gather data in the person's environment—geolocation, conversations—and see how those might be indicative of certain emotional states or loneliness."



## DANIEL FULFORD USES SMARTPHONES TO MONITOR PEOPLE WHO BECOME SOCIALLY DISCONNECTED— AND HELP THEM RECONNECT

Daniel Fulford plans to use millions of rows of data, collected via smartphone app, to better understand loneliness.

Fulford says the app pulls in a “ridiculous amount of data.” In a pilot study, which only grabbed subjects’ GPS information for one week, the team gathered about one million rows of data—per participant. The challenge for Fulford will be to not just interpret those stats, but make meaningful connections within all of that data. It’s why his lab includes computer science, engineering, and behavioral neuroscience students, as well as those focusing on clinical psychology and psychosocial rehabilitation. Another collaborator on the project is Carlos Busso, a professor of electrical engineering at the University of Texas at Dallas.

“His work has been in vocal processing of audio data,” says Fulford. “We’ll be using the microphones to gather rich data around vocal characteristics. We have to meaningfully extract those data and summarize them in ways that tell us something about people’s social interactions and connections.”

### EXPERIENCE SAMPLING

In using the app, Fulford hopes to work around a big gap in scientists’ understanding of mental health. For most studies of well-being, subjects complete a survey or interview that relies on memory and is shaped by how they feel in that moment. It’s like trying to review a feature-length movie from a single still.

“In the psychological realm, a lot of what we know about human behavior is based on questionnaires, self-reports, sometimes behavioral tasks,” says Fulford, who holds a joint appointment in BU’s Department of Psychological & Brain Sciences.

By using smartphones to monitor someone throughout the day, across weeks and months—an approach called ecological momentary assessment or the experience sampling method—Fulford can build a more nuanced picture of how people interact with the world and their feelings as they do.

“We can really understand not only human behavior in the context of their daily lives, but also fluctuations or changes in states of behavior,” says Fulford. “That’s something we can’t get very good data on if we’re just measuring things at one point in time.”

His approach also provides a counterbalance to our fickle memory. Most people struggle to report accurately how they were feeling last week, let alone a month or six months ago. For those with a severe mental illness, it can be even more of a challenge. “There are cognitive impairments or limitations that really could influence someone’s recording of their experiences over a period of time,” says Fulford.

### A FOCUSED APPLICATION

Although his latest study began in the general population, the final phase will be to apply any lessons to people with a serious mental illness. They are, on average, more isolated and more lonely, he says.

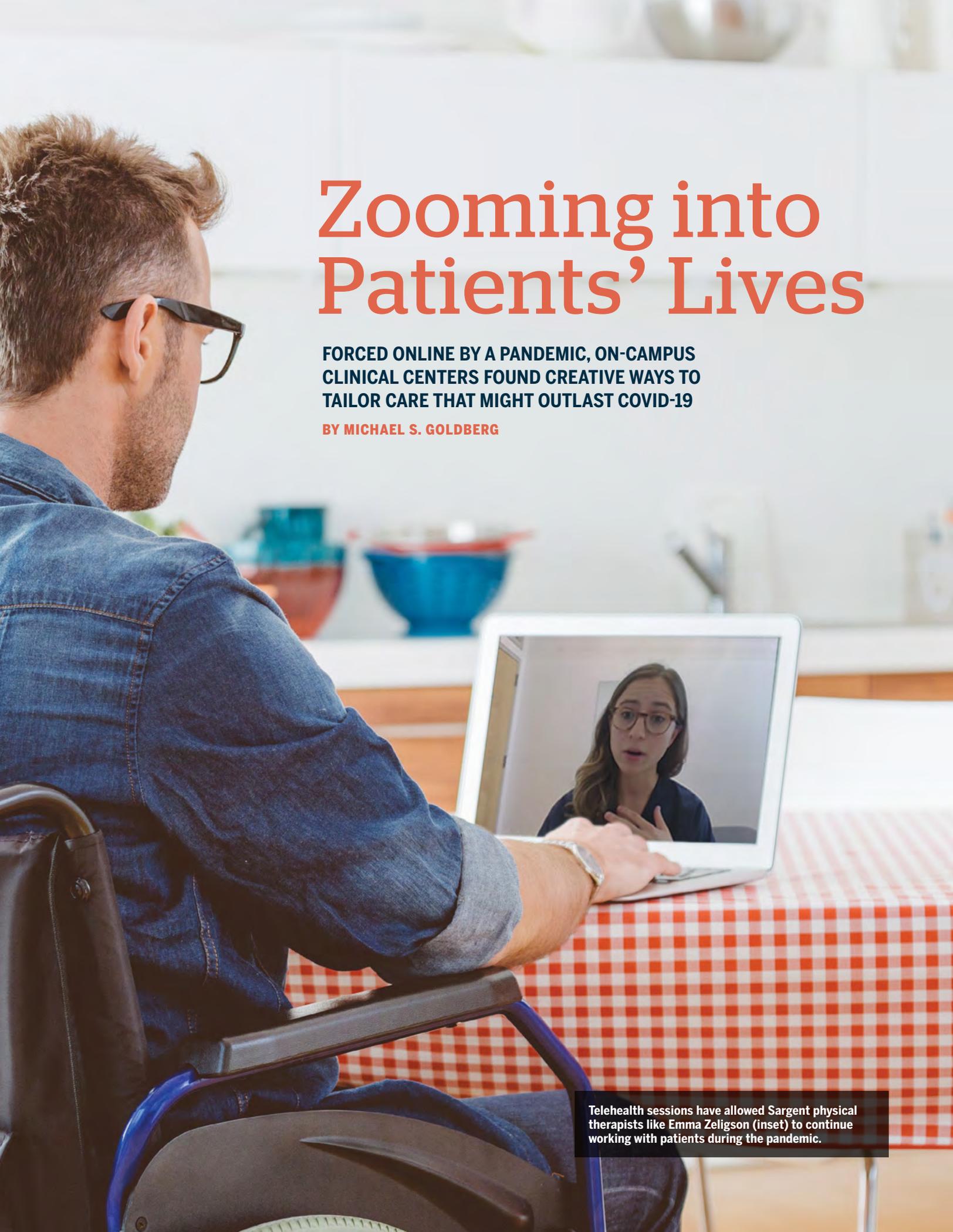
In past research, Fulford has found people with schizophrenia are less motivated to participate in some social activities. Asked to fill in a onetime report on activities they enjoy doing, they struggle to list anything. That lack of interest often translates into a lack of participation. But when Fulford has studied people with schizophrenia using the experience sampling method, he’s found something surprising: they have a good time during social activities. Maybe even a better time than others.

So why don’t they want to do it again? Fulford speculates the lack of social motivation might be due to impaired cognitive processes—the memories refuse to resurface. Or it could be tied to retrospective social anxiety: a fear they said or did the wrong thing. The same might apply to people with bipolar disorder or depression. Fulford’s team has built apps that attempt to bridge the gap between reality and memory, sending people personalized goals and reminding them of past successes. He says an app that motivates people to break out of a period of isolation is a natural extension of his latest study, too. The project team includes a practicing clinical psychologist, David E. Gard, a professor at San Francisco State University.

“If we can reliably predict when people transition from a state of social connection to isolation, to feeling disconnected or lonely, we can use the phones to feed information back to them,” he says. “We can provide steps and ways to address barriers to social goal attainment.”

Not that he expects the app to supplant office visits for people who need help. For a start, there’s a big digital divide when it comes to people with a severe mental illness: they’re less likely to have a reliable internet connection or own smartphones.

“I never think of the apps as tools that would replace face-to-face care, because I don’t think they would be effective,” says Fulford. “We’re trying to use them as ways to connect the client to the techniques and skills they learn in face-to-face therapy, but apply them in their daily lives.” ■

A man with short brown hair and glasses, wearing a blue denim shirt, is seated in a wheelchair. He is looking at a laptop screen on a table covered with a red and white checkered tablecloth. The laptop screen shows a woman with long brown hair and glasses, wearing a dark blue top, who appears to be a physical therapist. The background is a bright, out-of-focus kitchen with white cabinets and blue and red bowls on a counter.

# Zooming into Patients' Lives

**FORCED ONLINE BY A PANDEMIC, ON-CAMPUS CLINICAL CENTERS FOUND CREATIVE WAYS TO TAILOR CARE THAT MIGHT OUTLAST COVID-19**

**BY MICHAEL S. GOLDBERG**

Telehealth sessions have allowed Sargent physical therapists like Emma Zeligson (inset) to continue working with patients during the pandemic.

**A** week after Boston University's campuses closed and classes were shifted online due to COVID-19, physical therapist Tim Nordahl began videoconference sessions with patients at the Center for Neurorehabilitation. As Nordahl interacted with his clients, most of whom are dealing with physical limitations due to Parkinson's disease, he realized that although he couldn't touch his patients to guide a movement, he was gaining a more precise view into their lives.

After seeing inside a bedroom or kitchen, Nordahl found he could prescribe exercises tailored to those circumstances: how to gain leverage to rise from a mattress or use kitchen counters for support. "I have been pleasantly surprised at how much we can get done in this sort of format," he says.

Therapists and nutritionists at the Ryan Center for Sports Medicine and Rehabilitation, Sargent Choice Nutrition Center, and the Speech-Language Hearing Sciences Clinical Centers are reporting similar benefits using telehealth. Appointments via a videoconference is an idea that health-care providers have long considered but that wasn't covered by health insurance. That changed in March, when Medicare announced coverage for telehealth services and other insurers followed. Congress is now considering a proposal to make the changes permanent.

Karen Jacobs, associate dean for digital learning and innovation, says the pivot to telehealth fits into a broader effort at Sargent to use online channels to connect practitioners. For example, her research has shown that virtual peer-to-peer mentoring helps postdoctoral occupational therapy students build resilience so they can finish their programs. That same lesson applies to therapists ensuring that they cultivate personal connections with patients when meeting via Zoom. "We're understanding the natural context in which people live, and that is helping us to become even more client-centered," Jacobs says.

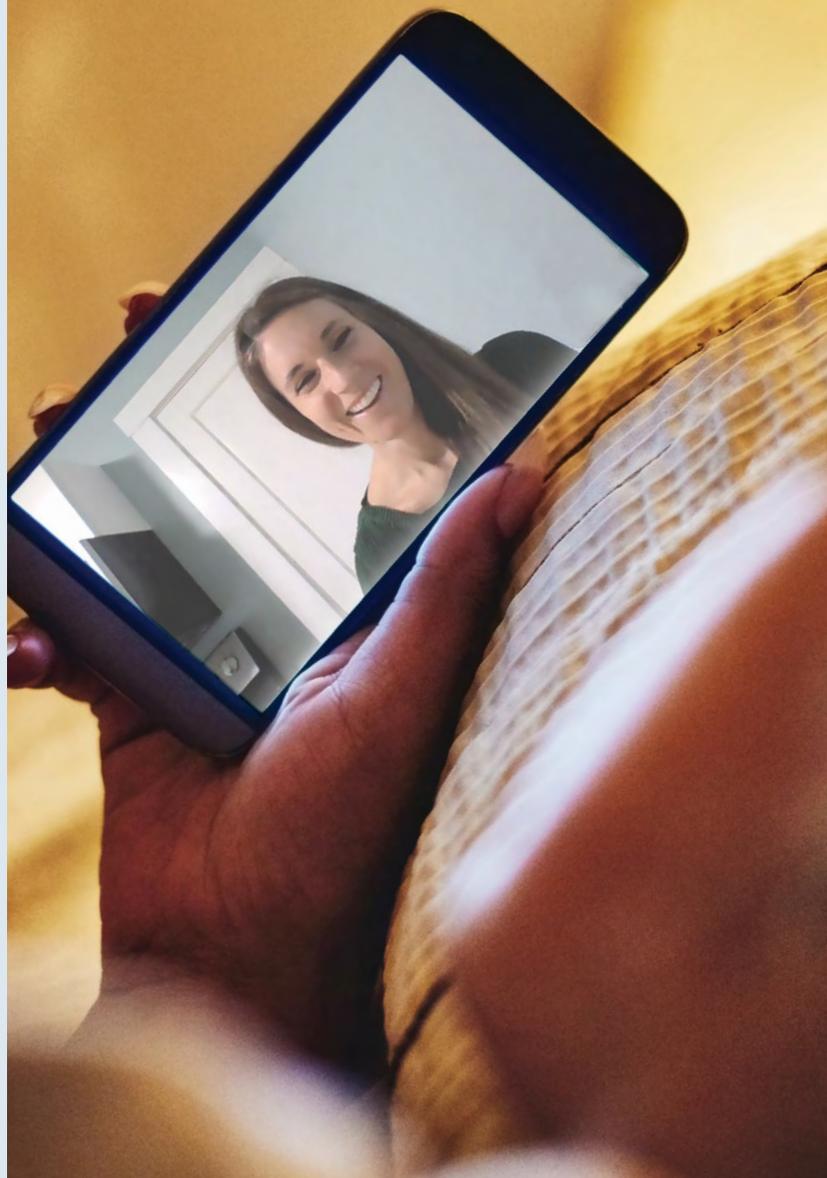
After the COVID-19 pandemic forced them to make a rapid transition to online services, leaders from all four centers and programs say they plan to continue virtual appointments as part of a hybrid care model, even after their facilities reopen.

### NEW INSIGHTS

The first virtual appointment at the BU Physical Therapy Center in the Ryan Center occurred on March 16. By mid-June, the center was holding about 40 percent of its typical physical therapy sessions online.

James Camarinos, clinic director, says it's forced his team to get creative. For example, he offered suggestions for easing one patient's neck discomfort after viewing how he lay in bed. "It allowed for a real-life intervention in the moment," he says. Without weights from the center at hand, Camarinos had another patient put books into a duffel bag.

"Perhaps the best thing that physical therapists do is they build meaningful relationships with their patients. And they help educate them and manage whatever condition is



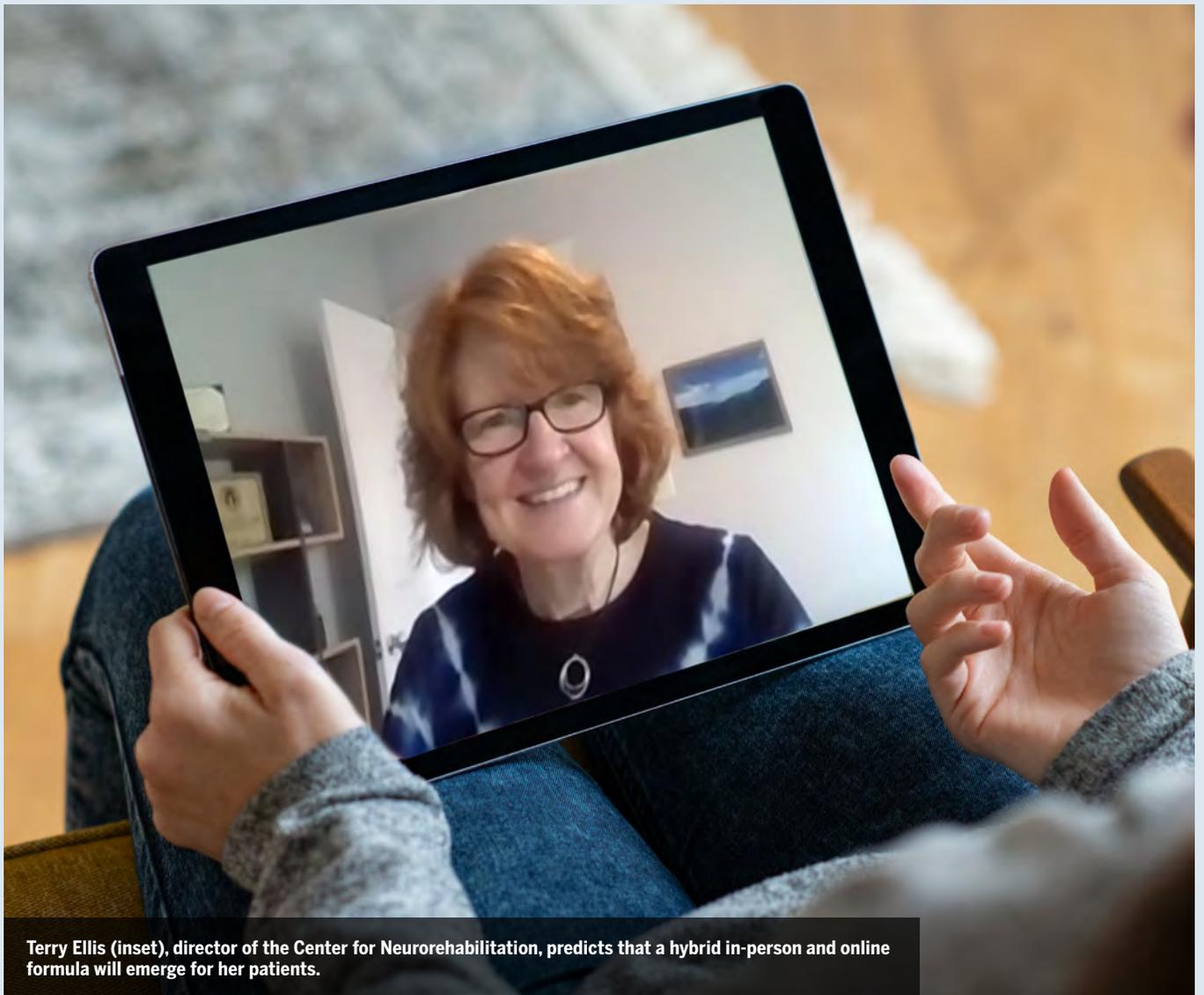
Zoom calls with nutritionists like Rachel Reynolds (inset), assistant director of the Sargent Choice Nutrition Center, have improved access for clients and decreased cancellations.

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**“WE’RE UNDERSTANDING THE NATURAL CONTEXT IN WHICH PEOPLE LIVE, AND THAT IS HELPING US TO BECOME EVEN MORE CLIENT-CENTERED.”**

**—KAREN JACOBS**

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**Terry Ellis (inset), director of the Center for Neurorehabilitation, predicts that a hybrid in-person and online formula will emerge for her patients.**

limiting them from doing the activities they want to do,” says Camarinos. “Through either modifying the activities or tailoring them differently or prescribing exercise, I can do all those things on telehealth.”

On June 3, the Ryan Center partially reopened. Patient visits were limited and staff wore gowns, masks, and gloves. But even as his team makes plans to broaden in-person services, Camarinos says he wants to see telehealth appointments continue. “There is a litany of research that supports the idea that early intervention is better than delayed intervention,” he says. “Telehealth is a really unique way that we could capitalize on that, if we’re smart and creative.”

### **A HYBRID SOLUTION**

Terry Ellis, director of the Center for Neurorehabilitation, agrees telehealth sessions are here to stay. She predicts the emergence of a hybrid model, with patients visiting the center when the physical therapists need to measure walking and balance abilities. Ellis, an associate professor and chair

of physical therapy and athletic training, says there are challenges specific to the work her center does with patients with Parkinson’s. For example, physical therapists need to perform an in-person baseline exam during intake, analyzing aspects of movement such as walking, balance, strength, and flexibility so they can measure progress or deterioration over time. The center resumed some of these appointments in July with staff wearing protective gear; by then, they’d already conducted 200 virtual visits with 50 patients.

“We can then see the advantage of having them do interim visits remotely, so that it would take some of the burden off of them of having to travel,” Ellis says. Such a model also means the center could attract out-of-state patients who would benefit from rehabilitation.

The telehealth experience builds on research that Ellis has conducted showing that Parkinson’s patients on average walk 10 percent more when they have an app on their phone or tablet that encourages regular exercise—a key to slow progression of the disease.

## AN EXPANDED REACH

The expanded reach of telehealth has proven especially helpful for the Sargent Choice Nutrition Center, which provides counseling and support services for people with a variety of conditions, including food allergies and intolerances, eating disorders, and digestive ailments, and also offers nutrition and cooking classes.

Stacey Zawacki, director of the center, and a clinical assistant professor of health sciences, says Zoom calls provide easier access for clients. As a result, cancellations have decreased. Telehealth also ensures continuity of care for students who have moved back home.

If a client has recently learned they have celiac disease or is testing different foods to identify a food intolerance, it takes time to learn new dietary patterns. An eating disorder doesn't stop for a pandemic. "There are a lot of people finding that eating in this changed world is very different and can be very challenging right now," she says.

From March 15 to June 15, the center's seven registered dietitian nutritionists conducted 730 telehealth sessions. That's 8 percent more than the in-person visits they held over the same period in 2019.

Because dietitians, like other healthcare providers, often discuss personal issues, they have to ensure their clients have a private space for video calls, which for some is a challenge, Zawacki says. But there are also benefits, such as being able to look at a client's food package label, or, if the client would like, strategizing around what's in the refrigerator. There are even teaching benefits to telehealth sessions. "In person, you're limited by the physical space," Zawacki says. But online, multiple students can observe a session, with a client's permission. And, after introducing themselves, they can shut off their cameras and mute their microphones, to observe unobtrusively. "It makes clinical training much more efficient," Zawacki says.

The center reopened in September, but the staff also expects to continue offering videoconference appointments as a way to augment in-person visits for current clients and to expand future clientele beyond the Boston area.

"The world is recognizing how valuable these services are," Zawacki says. "And a lot of the value is not just related to the pandemic."

## A STRATEGIC MOVE

Since March, graduate students in the speech-language pathology program have seen a range of clients via Zoom, including those with conditions like aphasia and language, speech-sound, fluency, and voice disorders. Michelle Mentis, MS program director and chair of the Department of Speech, Language & Hearing Sciences, says the move to telehealth has meant an increase in out-of-state clients.

The transition has also required that the students

develop creative approaches for communicating with clients in video sessions, says Meghan G. Graham, a clinical assistant professor who supervises graduate speech therapy students.

"I was worried that this was not going to work with the little kids," Graham says. "But our graduate students were incredibly innovative and creative and dedicated to making it work."

Graham recounted one child who is a fan of basketball star LeBron James. His speech therapist used a basketball court as a Zoom background and had the child practice telling a story—a key skill for young children developing language—to images of James. "He would just light up when LeBron would appear," Graham says.

Older clients, like those dealing with aphasia after a stroke have found rewards participating in a speech therapy group via videoconference, Mentis says. The social ties of the group meeting have eased their sense of isolation.

"At the time of the pandemic, when everyone was at home and having to stay at

home and had very little opportunity to socialize, these groups became even more important to some of the clients we were working with," she says.

Speech-language pathologists are collecting data to better understand the differences between telehealth and in-person clinical services, but it's too early to say if these sessions offer different benefits. Mentis says based on the experience so far, she expects that telehealth will continue after social distancing requirements ease. "This is not going away. This is going to be part of our arsenal of services that we can offer," she says. ■

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**“THERE IS A LITANY OF RESEARCH THAT SUPPORTS THE IDEA THAT EARLY INTERVENTION IS BETTER THAN DELAYED INTERVENTION. TELEHEALTH IS A REALLY UNIQUE WAY THAT WE COULD CAPITALIZE ON THAT, IF WE’RE SMART AND CREATIVE.”**

**—JAMES CAMARINOS**

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# COMMUNITY BUILDER

**BONNIE-JEAN BROOKS ('63) HAS TRANSFORMED LIVES FROM SOUTH CENTRAL L.A. TO RURAL MAINE**

BY CORINNE  
STEINBRENNER

**B**onnie-Jean Brooks is not easily intimidated. When faced with a difficult task—whether it's wrangling money from the Maine state legislature or preventing a COVID outbreak in the group homes she operates—she dives in with her personal and professional motto “Everything is possible.”

“There is so much that human beings can do and can discover about themselves. The limits of human potential are boundless,” says Brooks ('63), president and chief executive officer at OHI, a nonprofit providing housing and services to people with intellectual disabilities, autism, and mental illness in Down East and northern Maine.

With a blend of optimism and pragmatism, Brooks has led OHI for its entire 41-year history. The organization was created in 1979, when Maine began transitioning people with intellectual disabilities and mental illness out of large institutions and into community-based care. The new nonprofit—known then as Opportunity Housing, Inc.—planned to open two 6-person group homes for people then widely believed to be dangerous and incapable of being deinstitutionalized.

Brooks, who had years of prior experience directing physical education programs in schools and treatment centers, has since grown OHI into an organization serving more than 600 people a year across six counties—operating 32 group homes and a range of rehabilitation and support programs. The organization's work has transformed the lives of many, including a woman Brooks first encountered sedated and restrained in a psychiatric hospital who later married, owned a home, and held a job in her community.



Brooks has overseen OHI, a nonprofit that provides housing and services to people with intellectual disabilities, autism, and mental illness, for 41 years.

## COAST TO COAST

A native of tiny Stockton Springs, Brooks left Maine for the first time to study physical education at Sargent. “The day my mother took me to college and dropped me off on the sidewalk of Charlesgate Hall was quite an awakening,” she says.

When guidance counselors suggested Sargent’s science courses might be too difficult and recommended a transfer to the College of Basic Studies, Brooks refused. “I said, ‘No, no, I’m going to stick it out at Sargent. If I don’t make it, I’ll go home.’” She went on to become the first person in her family to earn a college degree.

After graduation, Brooks worked briefly in Maine teaching biology, health sciences, and physical education at rural Winslow High School, where she also coached soccer, basketball, field hockey, swimming, cheerleading, gymnastics, and lacrosse. In 1965, she and her then-husband boarded a Greyhound bus for a move to California. Brooks decided to look for a teaching job there and met with the physical education supervisor for Los Angeles’ public schools.

The only available positions were in south central L.A., a neighborhood still reeling from the recent Watts Rebellion. Brooks accepted a job at Charles Drew Junior High School, which had more than 1,000 students. “On my first day, the cafeteria was burning,” she says. Undaunted, she stayed to teach and was soon promoted to department head and was then asked to pilot an elementary school physical education program. She loved working in L.A.’s elementary schools and organized hikes and camping trips in the Angeles National Forest for her students.

“The kids in Watts trusted me because I built a relationship with them,” she says. “I think the whole world is about relationships.”

## BEAR WITNESS AND BUILD TRUST

Brooks and her young family moved frequently over the next decade, and she held jobs teaching and directing recreation programs in schools, daycares, and other facilities in New Jersey and Maine. When she accepted the leadership role at OHI, she felt it was important to “meet people on their ground,” so she moved into the Bangor Mental

Health Institute (now the Dorothea Dix Psychiatric Center) to live alongside the people she’d soon be transitioning to group homes. Living in her apartment there allowed her to witness patients’ trauma firsthand: she saw people eating out of garbage cans and being hosed down after using the bathroom. “You can’t develop trust with a person until you can understand their trauma history,” she says.

Under Brooks’ leadership, OHI has grown steadily in size and reputation, often taking over floundering programs from other agencies. Always willing to meet the needs of its communities, OHI agreed to take over a food pantry in Brewer, Maine, several years ago when local churches could no longer support it.

Because Medicaid payments make up the bulk of OHI’s budget, funding is always Brooks’ biggest challenge. She fills funding gaps by seeking grants and offering training programs to generate revenue—and by being as frugal as possible. Staffing is another challenge, as caring for people with multiple needs is hard work at relatively low pay. To boost retention, Brooks offers recognition, incentives, and flexibility. She also communicates directly with her more than 350 staff members as often as possible: “They need to know who’s at the helm. They need to know it’s someone who’s going to listen to them,” she says.

Communication has been especially important during the COVID-19 crisis. As Maine eased its restrictions this summer, Brooks urged her staff to remain vigilant about social distancing outside of work, reminding them of their important obligations to the vulnerable people they serve.

Brooks sees supporting people with disabilities as a duty and a privilege. Watching people grow and learn is inspiring, she says. “It enriches you, and strengthens you, and teaches you life lessons.” Despite many phone and Zoom calls, the social distancing required in recent months has caused devastating setbacks for OHI clients just beginning to build friendships and community ties. Brooks is heartbroken for them and anxious for the day when in-person progress can resume. ■

# IN ON THE GROUND FLOOR

**OVER A 50-PLUS-YEAR CAREER, AUDREY RANDOLPH ('58) HELPED USHER REHABILITATION MEDICINE INTO THE MAINSTREAM AND MAKE NEW YORK CITY MORE ACCESSIBLE**

**BY MARC CHALUFOUR**

**T**here was no grand plan that led to Audrey Randolph's 50-plus-year career as a physiatrist, a physician practicing rehabilitation medicine. The field was, after all, just emerging when she began her studies in the 1950s. But Randolph ('58) recalls an intense drive to learn more, carrying her from Sargent, where she studied physical therapy, into medical school. "It's the story of my life," she says. "I still have that same feeling: I don't know enough. I must learn more. That's just the way I am."

Rehabilitation medicine, which Randolph discovered as a medical student, was "an extension of my physical therapy background," she says. The field focuses on helping patients with physical impairments to restore functional ability and improve their quality of life. After finishing her studies at the Medical College of Pennsylvania, Randolph landed a residency at the Institute of Rehabilitation Medicine at the NYU Medical Center—a hub of the emerging field.

#### LEARNING FROM THE BEST

Howard Rusk, who had founded the institute in 1948, is considered one of the most influential figures in rehabilitation medicine—and Randolph was able to learn at his side. Simple practices like turning patients every two hours in their beds to avoid bed sores, good management of bladder and bowel function, and evaluating incapacity emerged from rehabilitation medicine practices. "Many of these concepts and improvements in management have become integral to the medical model in all modern hospitals," Randolph says. "Watching that develop was very rewarding."

The work of early physiatrists was also influential outside of the medical community. Randolph and her colleagues at NYU worked with paraplegic and quadriplegic patients, helping them to become independent. But outside the institute, the limitations of New York City's built environment hindered them before they left the block. "There were no curb cuts in New York at the time," she says. Anyone in a wheelchair was confined to a city block without help. Going to work or the store for basics was impossible because of parking limitations and inaccessible public transportation.

In 1968, Randolph was appointed to Mayor John Lindsay's Committee on the Handicapped. That group contributed to regulations that created curb cuts and accessible parking. She sat on another committee that advised the architects of Lincoln Center on how to make buildings more accessible, with the inclusion of ramped access and minimum widths for bathroom

doors. "Things that people just hadn't been thinking about up to that point," Randolph says. "I think these are important things to have done."

#### A MOVE TO THE CLASSROOM

In 1980, Randolph made a major career decision, entering academia as a member of the faculty at New York Medical College (NYMC) and director of the Department of Rehabilitation Medicine at the Westchester Medical Center. "My focus switched to teaching and building the department," says Randolph, who remains a professor of clinical rehabilitation medicine. "I enjoy seeing the lights go on in their eyes," she says of her students. She received an excellence in teaching and mentoring award from the college in 2015.

Throughout her teaching career, Randolph has also contin-

ued seeing patients. She equates seeing a new patient to solving a mystery. "My job is to figure out 'who is this, what are the diagnoses, what's their problem, how can I help to fix or ameliorate it?' As a member of the admissions committee of NYMC, and guest examiner for the American Board of Physical Medicine and Rehabilitation, I had to identify the ingredients to being a good doctor. I found that inquisitiveness and curiosity combined with empathy, intelligence, and hard work is a good combination for success." She has been listed in Castle Connolly's "Top Doctors" list every year since 1999.

#### LOOKING AHEAD

Like most medical professionals who provide elective treatments,

Randolph stopped seeing patients during the COVID-19 pandemic. Her practice began reopening in late May, rescheduling appointments with their patients most in need.

As Randolph learns more about COVID-19, she predicts an influx of people in need of pulmonary rehabilitation as well as general rehabilitation. "I'm being told that 30 to 35 percent of people who recover from this virus end up with a disability, whether it be pulmonary or neurological," she says. She's also concerned about people adopting increasingly sedentary lifestyles while spending so much time at home. "When we come out of this, we're going to have to look at what's happening to people," she says. "I don't know that we have the answers yet."

The forced break gave Randolph, who has been juggling medical, research, and academic roles for half a century, a glimpse of a more relaxed lifestyle—something she's hoping for more of having just hired a new physiatrist for her office. "I've made sure that my patients will be taken care of and will be handled well," she says. "That means that the circle is closing. My patients will be cared for, our department is in good hands, and our residents will take over for the next generation." ■

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**"INQUISITIVENESS AND CURIOSITY COMBINED WITH EMPATHY, INTELLIGENCE, AND HARD WORK IS A GOOD COMBINATION FOR SUCCESS."**

—AUDREY RANDOLPH

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# Faculty in Print

OUR FACULTY'S RESEARCH REACHES AUDIENCES ACROSS THE GLOBE. HERE'S  
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## Why I Give

Kevin Wright (CGS'90, Sargent'93)

Kevin Wright always knew he wanted to be a physician—it ran in the family. His mother is an anesthesiologist, and his father a psychiatrist. BU, he says, gave him the tools he needed to be able to realize that dream.

Today, he is an orthopedic surgeon in private practice in New York City, specializing in treating the upper extremities—anything, he explains, “from the shoulder all the way to the fingertips,” including rotator cuff tears, fractures, carpal tunnel syndrome, and arthritis.

“Besides exposing me to a lot of things that I would use in my professional career, BU gave me a good work ethic,” says Wright. “I learned how to delve into a topic, assimilate the information quickly, and then apply that knowledge to the case before me.”

The real-world offerings at Sargent College helped, says Wright. Among them, he cites the opportunity to study anatomy using cadavers and measuring maximal oxygen consumption while on a treadmill in an exercise physiology lab.

Wright, who majored in human physiology and minored in chemistry, wants current Sargent students to have access to the same opportunities that enabled



his progress. That’s why he’s been a consistent monthly supporter of the Sargent Annual Fund: the flexible fund with which the dean addresses the college’s areas of greatest need, from scholarships to facilities to experiential learning.

“The environment at Sargent College is dynamic,” says Wright. “Making contributions with no strings attached means my gifts will be used to advance the most essential causes.”—*Thea Singer*

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Boston University Planned Giving

# BU Sargent College

## Who We Are

### Students

	Undergraduate	Graduate
Number of full-time students	1,215	625
Average SAT score	1277	n/a

### Faculty

Full-time	83
Part-time	33

### Alumni

18,328 in 69 countries

### Clinical Sites

More than 1,500 in 49 states and 3 countries

## Areas of Study

Athletic Training  
 Behavior & Health  
 Health Science  
 Human Physiology (Pre-Med)  
 Nutrition  
 Occupational Therapy  
 Physical Therapy  
 Rehabilitation Sciences  
 Speech, Language & Hearing Sciences  
 Speech-Language Pathology

## Distinctive Programs

- Combined BS and MPH in Public Health
- Combined BS in Health Studies and Doctor of Physical Therapy
- Combined BS and MS in Human Physiology
- Joint Bachelor of Science in Linguistics and Speech, Language & Hearing Sciences
- Combined Doctor of Occupational Therapy/PhD in Rehabilitation Sciences
- Combined Doctor of Physical Therapy/PhD in Rehabilitation Sciences
- Fellowship in Orthopaedic Manual Physical Therapy
- Neurological Physical Therapy Residency Program

## U.S. News & World Report Best Graduate School Rankings

Our graduate programs are officially among the nation's best—Sargent programs tracked by *U.S. News & World Report* all rank in the **top 20** in their respective fields:

**1**

**Occupational Therapy Program**  
ranked number **1 out of 198** programs

**10**

**Speech-Language Pathology Program**  
ranked number **10 out of 261** programs

**20**

**Physical Therapy Program**  
ranked number **20 out of 239** programs

## National Certification Board Exam Passing Rates

**100%\*** ATHLETIC TRAINING

**100%** NUTRITION

**100%** OCCUPATIONAL THERAPY

**99%** PHYSICAL THERAPY

**100%** SPEECH-LANGUAGE PATHOLOGY

Percentage of BU Sargent College students in entry-level graduate professional programs who passed their certification exams the first time.

\* Data averaged over the past three years, with the exception of athletic training, which is averaged over the last two years.

**ABOUT US** Boston University College of Health & Rehabilitation Sciences: Sargent College has been defining healthcare leadership for 140 years. Our learning environment fosters the values, effective communication, and clinical skills that distinguish outstanding health professionals, and we continuously enhance our degree programs to meet their future needs. Our curricula include fieldwork, providing students in every degree program with clinical experience, as well as internships at more than 1,500 healthcare facilities across the country. The college also operates outpatient centers that offer a wide range of services to Greater Boston.



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