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STUDYING AUTISM FROM EVERY ANGLE

Sargent researchers are helping us better understand one of the most complex brain mysteries of our time
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Dr. Pain-Free

Orthopedic surgeon Steven Gorin helps his patients get back to their lives.

InsideSargent

2022–2023

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Dear Friends,

It’s a pleasure to introduce this issue of *Inside Sargent*. It’s also bittersweet, as this is the last edition I’ll oversee as dean. I’ve decided to retire at the end of the 2022–2023 academic year. It’s been an extraordinary eight years for me at Sargent, thanks to the camaraderie and teamwork of our community of alumni, faculty, staff, and students. I’m proud of our many achievements together, including new endowed professorships and student scholarships as well as the ever-increasing quality of our clinical education and graduate professional programs. And we’re not done yet!

We began the fall semester following an ambitious summer of growth and preparation—including transformational additions to our faculty and long-anticipated building enhancements to best prepare students for careers in a global workforce. Most notably, construction began in July on the new Sargent College Center for Clinical Simulation, an innovative lab and learning space that will mirror an acute care hospital setting (page 16).

Interprofessional education, practice, and collaboration are at the heart of our work, and in this issue, you’ll read about several examples aiming to improve health outcomes across the lifespan. In particular, the cover story on autism (page 10) showcases our uniquely specialized, interdisciplinary expertise: neurophysiologists examining the structure of autistic brains; occupational therapists studying the connections among autism, movement, and cognitive development; a speech-language pathologist developing a neurodiversity group supporting autistic women; and others who are devising new ways to build a neurodiverse society (page 19).

Many of you have written to note the retirements this year of two beloved, longtime Sargent faculty. Honored at a reception this summer, Diane Constantinou, a professor of speech, language, and hearing sciences, and Julie Starr, a professor of physical therapy, were integral to Sargent’s growth and success, each for more than 30 years. We are incredibly grateful for their innumerable contributions, especially in the area of clinical innovation, and for their work guiding generations of students to care most effectively for their own patients.

We look forward to continuing to build on this work in the year ahead, and I hope to see you at one of our upcoming events.

Warmly,

Christopher A. Moore
Dean and Professor

*WebExtra* Read more about Dean Moore’s retirement and what it means for Sargent at [bu.edu/today](http://bu.edu/today).

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**New Perspective**

**RENOVATED PUBLIC HEALTH RESEARCHER**

**EMILY ROTHMAN NAMED TO CHAIR OCCUPATIONAL THERAPY DEPARTMENT DURING 7 YEARS ON THE FACULTY AT BU’S SCHOOL OF PUBLIC HEALTH (SPH),** Emily Rothman, developed an international reputation for her violence prevention research, in particular for her studies of intimate partner violence and sexually explicit media. But her daughter’s diagnosis of autism led her to reexamine the autism spectrum and led to a new line of research, a relationship with autism researchers at Sargent, and a professional pivot. In September 2021, Sargent named Rothman chair of the occupational therapy department.

“She’s a leader—empowering others to mentor and support others—what I wanted for the next chapter of my career,” she says of her new role.

Rothman, who also maintains appointments at SPH and the School of Medicine, spoke with Inside Sargent about the state of OT, her autism research, and what most excites her about her new job.

*Inside Sargent: What do you bring as a leader to this department?*

**Emily Rothman:** First, I bring my appreciation for the faculty and staff of this top-ranked program and gratitude to be able to work alongside them. And, I think that I bring passion for disability justice, antiracism, and centering the needs of sexual and gender minority individuals. I also hope that my background in public health means that I can open new doors and make new connections. People in occupational therapy are doing incredible research and meaningful scholarship, but there are some ways in which they’ve been shut away from the world. I’m excited about opportunities and certain areas on the world stage. To give one concrete example, I’ve been on an editorial board of a journal in substance use treatment for many years. When I joined the world of OT, I proposed to the journal that they devote a special issue to substance abuse treatment and IVP. The editor in chief kindly agreed, and I am pleased to say that now faculty in the OT department are preparing to publish a special issue that highlights OT’s role and distinct value within substance abuse treatment for that issue. Have the fields of OT and public health evolved in ways that bring them closer?

People are increasingly embracing not only what, in OT, is called occupational justice—which aligns with what I’ve always thought of as social justice—but our students are enthusiastic about learning how social determinants of health influence their clients and how they are going to be able to address those through their work. That’s fundamental to how I’ve approached the study of public health problems. The moment is absolutely ideal for this interdisciplinary collaboration between public health and occupational therapy.

*You mentioned pivoting to autism research a few years ago. What are you working on now?* I have several projects, and several involve current OT students. I am actively seeking OT practitioner partners for that project now. And third, I am researching underage alcohol use by autistic adolescents.

*What are you most excited about right now?* Number one, the students. They are extraordinary, compassionate people and on fire with energy for changing the world. We’re not only top-ranked professionals, but all of the faculty are also engaged in scholarship. I have a lot of energy for thinking about how we all can continue to reach an expanding national and international audience.

—Marc Chalufour

*WebExtra* Read an expanded version of this interview at [bu.edu/sargent/inside-sargent](http://bu.edu/sargent/inside-sargent)
LEADING NEW EFFORTS
FOR PSYCHIATRIC REHABILITATION

WHEN DORI HUTCHINSON JOINED BU’S CENTER FOR PSYCHIATRIC REHABILITATION in 1984, just five years after it was founded by William A. Anthony, her role played a key role in the center’s mission. Hutchinson helped create a center designed to provide serious mental illnesses to choose, get, and keep services in the late 1990s, Hutchinson oversaw its expansion in 2000 to college mental health education services, offered to BU and non-BU students. One service provides coaching to students with serious mental health conditions who want support to return to college or finish a degree. Another program, NITRO, invites university college students who have taken a medical leave of absence from any university due to a psychiatric condition to spend a semester at BU.

“McKeown’s previous research showed that a diet rich in whole grains led to smaller gains in waistlines and less belly fat, a particularly dangerous type of fat surrounding vital organs. Individuals who consumed three or more servings of whole grains daily also had lower increases in blood pressure and blood sugar levels compared to those who ate less than half a serving. Conversely, her research has found that these health benefits are not observed among those who eat more refined grains.”

“I recommend people try to increase their intake of whole grains by replacing some refined grains with whole-grain alternatives, such as switching from sugary ready-to-eat breakfast cereals to oatmeal or switching from white rice to quinoa or brown rice.”

WHAT NOT TO EAT

We’re all familiar with the benefits of consuming added sugars to less than 10 percent of daily calories, but, on average, upwards of 15 percent of our daily caloric intake is derived from added sugar in the diet. Sugary beverages are among the biggest problems. McKeown found that people who drink more sugar-sweetened beverages are at greater risk of developing nonalcoholic fatty liver disease, prediabetes, dyslipidemia, and more of that unhealthy belly fat.

ADAPT AS YOU AGE

As we grow older, our calorie needs decline. This means that to maintain a healthy weight or lose weight, we should be consuming fewer calories as we age. Your diet doesn’t need to be restrictive, McKeown says. For example, Mediterranean and vegetarian diets are both healthy animal fats with DGA, and aging adults may choose the one that better aligns with their preferences.

After all, says McKeown, “a healthy diet can be personalized to align with what you enjoy to eat, so you don’t need to limit yourself.”

Nicola McKeown found that a healthy diet can slow aging.
NEW FACULTY
Samantha Brown, clinical assistant professor, physical therapy
Kimberly Crespo, assistant professor, speech, language, and hearing sciences
Emily Evans, assistant professor, physical therapy
Jana Iverson, professor, physical therapy
Sara O’Brien, lecturer, nutrition

PROMOTIONS
Dustin Allen, senior lecturer and program director, human physiology
Maghalene Balz (’09), clinical assistant professor, speech, language, and hearing sciences
Joan Salge Blake, professor, speech, language, and hearing sciences
Director, human physiology
Kimberly Dahl (’24), clinical assistant professor, nutrition

CLINICAL SUMMER EXPERIENCE IN BRAZIL
THIS SUMMER, SARGENT STUDENTS IN THE DOCTOR OF OCCUPATIONAL THERAPY (OTD) PROGRAM SPENT TWO WEEKS IN BRAZIL LEARNING ABOUT THE COUNTRY’S HEALTHCARE SYSTEM AND ITS MODEL OF OCCUPATIONAL THERAPY. LED BY PEDRO ALMEIDA, A CLINICAL ASSOCIATE PROFESSOR AND THE ENTRY-LEVEL OTD PROGRAM DIRECTOR, STUDENTS SAW OCCUPATIONAL THERAPISTS PRACTICING IN SETTINGS SUCH AS ONCOLOGY, RHEUMATOLOGY, MENTAL HEALTH, NICU, AND MATERNITY CARE. ALMEIDA LED A WORKSHOP ON ORTHOSES FOR SARGENT STUDENTS AND OCCUPATIONAL THERAPISTS AT THE UNIVERSIDADE DE BRASILIA HOSPITAL. THE GROUP SHARED EXPERIENCES, LEARNED HOW TO MAKE ORTHOSES, DISCUSSED CURRENT CLINICAL CASES AT THE HOSPITAL, AND USED THEIR CLINICAL REASONING TO IDENTIFY THE BEST CLIENT INTERVENTIONS.

THE TRIP WAS adding this year as part of the OTD CURRICULUM, AND ORGANIZED AND MANAGED BY THE DEPARTMENT’S INTERNSHIP PROGRAM DIRECTOR, TRISHA MOSER. THE TRIP INCLUDED A WORKSHOP ON ORTHOSES TITLED “THE ART AND SCIENCE OF ORTHOTIC DESIGN,” LED BY ALMEIDA.

AWARDS & HONORS
HEALTH SCIENCES
Sara O’Brien (’10), a nutrition lecturer, is a recipient of the 2022 Outstanding Preceptor Award from the Academy of Nutrition and Dietetics.

OCCUPATIONAL THERAPY
Marianna Farquhar, director of training and international services at the BU Center for Psychiatric Rehabilitation and a clinical professor, was elected president of the World Association of Psychosocial Rehabilitation.

Karen Jacobs, clinical professor and associate dean for digital learning and innovation, received the IEA Fellow Award from the International Ergonomics Association.

Learned how to make orthoses, discussed current clinical cases at the hospital, and used their clinical reasoning to identify the best client interventions.

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AN EXEMPLARY CAREER
AFTER 34 YEARS IN THE CLASSROOM AND CLINIC, JULIE STARR RETIRES

But Starr’s influence is probably best felt in the classroom, where thousands of students have passed through her courses throughout her tenure. Ellis estimates. In 2006, Starr received the Whitney Powers Award for Teaching Excellence, and in 2019 the American Physical Therapy Association named her a Catherine Worthingham Fellow—the organization’s highest honor. “She is super passionate in the classroom, very engaged, and very invested in the growth and development of our students,” Ellis says.

Starr has maintained her certification in cardiac life support and as a cardiopulmonary specialist and continued to see patients at Beth Israel Deaconess Medical Center through her practice there. This added only to the richness of her in-class instruction, Ellis says.

“There’s nothing like being able to stand up in front of the class and say, ‘The patient I saw yesterday in the ICU presented with...’” Ellis says. “She has done that for 34 years and maintained both of those things in a way that is exemplary.”

What will Starr miss most about teaching at Sargent? Two things, she says. “The camaraderie with the other Sargent faculty and “watching those ‘aha’ moments from the students when it all starts to click into place. That is so much fun.” —Steve Holt

LEONNE YINISA-NYAHKoon (CGS’98, SARGENT’01,’03,’09), a clinical assistant professor, received an inaugural MACE Fellowship.

PHYSICAL THERAPY
Terry Ellis (MED’05), associate professor and chair, received the 2022 American Parkinson Disease Association Shawn Thornton Service Award.

Akhmat Mehta (20’22), a doctor of physical therapy student, received the Ruth Hall Award from the Massachusetts chapter of the American Physical Therapy Association.

LaDora Thompson received the Denham Harman Award from the American Aging Association and was named a Catherine Worthingham Fellow of the American Physical Therapy Association.

SPEECH, LANGUAGE, AND HEARING SCIENCES
Liz Hoover, a clinical professor, received the Gerry Cormier Communicative Access Award from the Aphasia Institute.

Jennifer Zuck, an assistant professor, received the Hartwell Individual Biomedical Research Award, as well as the Albert M. Galaburda Research Award from the Dyslexia Foundation.

Kimberly Dahl (’24) and Hilary Miller (’24) were awarded ASHFoundation New Century Scholars Doctoral Scholarships. Miller was also awarded a Raymond H. Stetson Scholarship in Phonetics and Speech Science from the Acoustical Society of America.

Julie Starr instructs a class of her physical therapy students.
Steering the Ship

Sargent trains some of the world’s top physical therapists. Leading and supporting them is clinician, researcher, professor, and department chair Terry Ellis

by Steve Holt

American doctors live 11 years longer, on average, than we did in 1950, and benefit from earlier detection and treatment of chronic conditions. As a result, the field of physical therapy is as vital as ever.

The beating heart of Sargent’s physical therapy department is its chair, Terry Ellis. Ellis (MED’05) got her start as a physical therapist in 1988, and for more than 30 years has helped her patients maintain or regain their mobility and quality of life—especially those with neurological conditions. Ellis joined the Sargent faculty in 1995, where her research has focused on how exercise and rehabilitation improve mobility and reduce the progression of disability in individuals with Parkinson’s disease. In 2019, Sargent named Ellis department chair, a role in which she encourages her colleagues, supporting their research—while continuing her own, be it studying the positive effects of exercise after a neurological diagnosis or using music and robotics to improve walking ability in the real world. From labs to classrooms to clinics, the department is a leader in an exciting and growing field of practice.

“We want to move the field of physical therapy forward, we want to lead that movement, and we’re doing that in many different ways,” she says.

Ellis spoke with Inside Sargent about her research, how she approaches her leadership role, and why she believes the department’s best days are ahead of it.

Inside Sargent: Your research really runs the gamut, from the positive effects of exercise on those with chronic illness, to using exosuits in rehabilitation, to digital therapeutics, and more. What is most exciting for you right now?

Terry Ellis: I’m very passionate about helping people with chronic neurological conditions. The approach I take to doing that is multifaceted, coming at it from multiple directions to try to optimize the outcomes. People with Parkinson’s disease and stroke, they live and they live a lot longer. Rehab becomes more and more important as we have more and more people in our population living with conditions, and living decades.

One of the most exciting things we’re working on now are these exosuit projects. Lou Awad is leading this work in stroke (page 22). In Parkinson’s, there’s something called “freezing of gait.” This is a problem with walking in which people with Parkinson’s either can’t initiate walking, or they stop walking, or they have difficulty turning, because their feet shuffle and get stuck to the floor. We have a gentleman in his 60s with Parkinson’s who came in to see us over the last couple months, who basically cannot walk. So, we tried these soft exosuits, these robotics, which are wearable. It’s made out of fabric that you put on, the legs in this case, and there’s a motor around your waist, and cables that pull joints in certain directions, based on what we’re after. We have brought this person in several times, and when we activate the suit, we can prevent that freezing from coming on. So, there’s some initial promising results that are actually quite profound, suggesting that we might be able to use this technology in the rehab space to try to overcome a major problem that doesn’t have any other treatments.

What does being chair entail, compared to professor, researcher, clinician?

Much of my time over the last two years has been spent figuring out how to keep our programs going in the face of a pandemic. With social distancing and all the requirements that were put in place, we had to establish a real innovative way to deliver our program and still provide the education that our students need to become great physical therapists.

But besides that, I see myself as the person who is steering the ship. One of my favorite parts of the job is to help other faculty reach their goals and help them be successful in what they aspire to, whether that’s advancement in their rank, advancement in the work they’re doing, starting a new project, or innovating something that will help move the field forward. I’ve been here for many years, and I’ve felt a lot of support from the faculty over the years, so I feel like it’s my turn to step up, to continue to bring the department together, and to help us advance as individuals and as a group.

We’ve also spent a lot of time over the last year and a half or so reviewing our curriculum. We know we have a great curriculum. But that’s not good enough. Healthcare is changing rapidly. Are we preparing ourselves for the future? When our students graduate in a few years, where are they going to be? We want to be on the forefront of producing leaders in our field who are going to be the innovators and people leading the charge as healthcare continues to evolve. We have to be ahead of the curve.

What are some of the curriculum changes you’re anticipating, in light of how the field of PT is changing?

The field is moving toward “value-based care”—what is the value we bring, how do we optimize that value, and how do we demonstrate that to the patient and the third-party payers? Boston University is obviously putting a lot of emphasis on big data, with data science faculty being hired and the Center for Computing & Data Sciences coming up, so we are eager to collaborate with the data science faculty in the healthcare sphere, and particularly in rehabilitation. Using that skills in machine learning and AI and our expertise in healthcare data, we can answer the big questions in the field in order to then elevate practice and outcomes.

We spend a lot more time in our courses now talking about the social determinants of health and population-based practice. In physical therapy, you treat one individual at a time. But I think we’re at a time where we need to think about how we can help people from underserved communities access healthcare in the same way as others.

What are you most excited about as you look to the future of this department?

We’re really growing our research agenda. We’re bringing in these talented faculty this fall (page 6). The growth and our impact in terms of research in the rehab field is going to be even greater as we leverage the incredible talent that we have among our faculty as we help them grow and get tenured and evolve their work. I’m also excited about our clinical faculty and their growth and achievements. I really think they are going to be even better positioned and better able to move their scholarship forward as we invest in them, their ideas, and their growth and development over the next several years.

We also have amazing students. They’re very invested, they’re great to work with, and we have high expectations of them when they graduate. I see many of our students as the future leaders of the field, and we’re really trying to prepare them in that way.

You have a big job. How do you balance it all?

I do have a great infrastructure in my research because I have built it over the years. I can rely on a strong team to carry out the day-to-day aspects of the research that need to be accomplished, so that helps a great deal. I also have an amazingly talented, successful faculty. You’re really taking a strong group and making them even stronger. That’s a good place to be. It is a challenge to juggle it all, but I’m invested in this, so that helps you give your all.
From identifying the markers of neurodivergence to treating and supporting autistic people, Sargent researchers are helping us better understand one of the most complex brain mysteries of our time.

by Ting Yu

In 1943, eminent child psychiatrist Leo Kanner published a seminal report in the journal *The Nervous Child* detailing his observations of 11 children with remarkable intelligence whose behavior was “governed rigidly and consistently by the powerful desire for aloneness and sameness.” Kanner was among the first to describe the condition that would later come to be known as autism spectrum disorder (ASD), a developmental disability characterized by highly focused interests and marked differences in communication and social interaction. Although our understanding of autism has evolved significantly, much about ASD, including its causes, remains a mystery.

Autism cannot be diagnosed with a medical test. Instead, physicians and psychologists evaluate a person’s abilities and development. But as the word “spectrum” connotes, there’s no one profile for individuals with autism. People with ASD may exhibit a varied constellation of traits and behaviors that can make it challenging to treat. One autistic high school student may be headed for college with their typically developing peers while another is nonverbal. As autism researcher, author, and advocate Stephen Shore once said, “If you’ve met one person with autism, you’ve met one person with autism.”

Over the last two decades, autism rates have risen steadily in the US, according to the Centers for Disease Control and Prevention. In 2000, one in 150 children had a diagnosis of ASD by the age of 8. Today that statistic is 1 in 44. But experts say the jump in reported cases doesn’t point to a true surge. Rather, the increase can be explained by greater parental awareness, more routine pediatric screening, and a broadening of diagnostic criteria to include its milder forms.

With more and more families looking for answers and support, Sargent investigators and clinicians are at the forefront of some of the most innovative work in autism research and intervention. Emily Rothman, chair of the occupational therapy department, is devising new ways to support BIPOC (Black, Indigenous, and people of color) youth with autism as well as those who are grappling with alcohol or substance abuse or who have been victims of sexual assault. (See page 3 for a Q&A with Rothman.) Gael Orsmond, who directs Sargent’s Families & Autism Research Lab, is studying ways to prepare autistic teenagers for adulthood. Basilis Zikopoulos, director of the Human Systems Neuroscience Laboratory, is pioneering research comparing the physiology of neurotypical brains to the brains of individuals with ASD. Simone Gill, director of the BU Motor Development Lab, is probing the connection between the way autistic kids move and how they think. Meghan Graham, a clinical assistant professor in the Department of Speech, Language, and Hearing Sciences, supports women with autism through a social group that embraces their neurodiversity.

“We still have so much to learn,” says Orsmond, who started her research with autistic individuals in the 1990s. “Back then we didn’t know much about autism, and in some ways, we still don’t. The complexity of autism requires that we all work together.”

Note: In this story, the author uses “autistic” and person-first language interchangeably. While some advocate for person-first language when referring to individuals with autism, many people with ASD prefer “autistic” as an embrace of their neurodiversity.
MEGHAN GRAHAM, CLINICAL ASSISTANT PROFESSOR, SPEECH, LANGUAGE, AND HEARING SCIENCES

When speech-language pathologist Meghan Graham (’06) started a group for women with autism in 2021, she brought together six of her clients with similar profiles. All were ambitious and highly capable—three had PhDs and most held demanding jobs—but, as a group, they struggled with executive functioning and navigating the social demands of their jobs. Graham believed she could offer valuable coaching to help them overcome these challenges.

But as the women began to share their stories, Graham found herself listening more than presenting. She was unsettled by how her clients had been mistreated in academic, professional, and even healthcare settings. One woman’s boss told her, “You’re smarter than you are annoying. Thankfully.” Another woman, a talented data analyst, was derailed with criticism from her team.

“The way this woman can see patterns in the data is remarkable, yet all she gets is negative feedback for her communication style,” Graham says. “These women have amazing gifts that are often not appreciated because they don’t fit the typical mold. Hearing how misunderstood they are was heartbreaking.”

It was also revelatory. Graham was struck by how, despite their troubles at work, the women understood one another perfectly when they were together. It wasn’t that her clients were poor communicators, she realized. They were simply speaking a different dialect. “I started taking more of a neurodiversity approach,” Graham says—one where differences in ways of thinking and behaving are seen as variations, not deficits.

“I’m unlearning everything I thought I knew about how to treat autism,” she says. “It’s not about teaching these women how to act more like the rest of us. I see my role now as helping them understand their own profiles as well as sharing what the neurotypical experience and expectations are, because that’s the majority of the world they’re living in.”

Mostly, Graham says, it’s about creating community and building self-advocacy skills. Last month, the group generated a flyer about what it’s like to be a woman with autism and shared it with coworkers. It was so well received that they’re now working on launching a website.

“The way our society approaches people with autism is biased in many ways. We make it so that neurodivergent people have to conform to our [neurotypical] social frameworks, and they shouldn’t have to,” Graham says. “We should be teaching about these differences and giving people the autonomy to advocate for what they need.”
SIMONE GILL, ASSOCIATE PROFESSOR, OCCUPATIONAL THERAPY

As director of BU’s Motor Development Lab, Simone Gill spends her days studying how children and adults move through the world. She has examined how obesity impacts a person’s gait and whether body composition affects motor performance and cognitive functioning.

In 2018, Helen Tager-Flusberg, director of BU’s Center for Autism Research Excellence and a mentor to Gill, proposed they do a joint study on minimally verbal children with ASD. “The working assumption is that these children have cognitive impairments that impede language development. But what if there is a physical component too?”

The study piqued Gill’s interest in exploring the relationship between gross motor function and cognitive development in kids with ASD. “Autistic children tend to sway when they stand and have less postural control,” she says. “This makes them less apt to engage in physical activity, less inclined to be interested in the world.”

Says Gill. “My hope is that what we learn will help us move toward creating personalized, innovative interventions for children with autism.”

Gill has applied for a grant from the National Institutes of Health to study the neural basis of motor function in kids ages 7 to 12 with ASD. The proposed study would recruit 60 children—30 who are typically developing and 30 who fall across the range of the autism spectrum. Gill plans to compare brain scans taken while the children perform physical and cognitive tasks, particularly ones that involve competition between the two: keeping balance and talking at the same time or completing a categorization exercise on a touch screen while balancing on one leg, for example.

“Having them perform dual tasks will expose challenges related to both,” she explains. (Gill plans to collaborate with David Boas, a BU professor of biomedical engineering and an expert in functional near-infrared spectroscopy, a groundbreaking technology that allows neuroimaging to be done while a subject is moving.)

Perhaps we can find new interventions that give us more bang for our buck—ones that improve both motor function and cognitive development at the same time,” Gill says. “My hope is that what we learn will help us move toward creating personalized, innovative interventions for children with autism.”

A Move Toward Better Interventions

A prolific investigator with several papers currently under review and more in the pipeline, Zikopoulos is brimming with new ideas. “Every time we answer a question, we have at least two or three more we want to answer,” he says. “It’s a never-ending process, but it’s very exciting.”

BASILIS ZIKPOULOS, DIRECTOR, HUMAN SYSTEMS NEUROSCIENCE LABORATORY

Fifteen years ago, when Basilis Zikopoulos was still a research associate in BU’s health sciences department, working with BU neuroscientist Helen Barbas, he received a profound gift from a colleague. Gene Blatt, then a neurobiologist at BU’s School of Medicine, gave him samples from two postmortem human brains donated from individuals with autism and matching control tissue. The tissue samples enabled Zikopoulos to conduct a series of pilot studies that led to securing his first-ever grant—to study white matter cortical pathways in autism—and launched his career as a neuroscientist.

“A human brain is the most precious resource you could ever ask for,” says Zikopoulos, now an associate professor in health sciences. Today, his tissue bank contains nearly 100 postmortem brain samples from child and adult donors, with and without autism or other brain disorders. Specially cryopreserved and processed, the tissues can last for decades.

Most autism research centers on the functioning and behavior of living subjects. Zikopoulos’ access to human brain tissue gives him a unique window into the neural circuitry—and even molecular inner workings—of developmental disorders such as autism and schizophrenia. “It’s amazing to be able to understand exactly how different neurons connect and communicate with each other at the structural and molecular level,” he says.

“Having them perform dual tasks will expose challenges related to both,” she explains. (Gill plans to collaborate with David Boas, a BU professor of biomedical engineering and an expert in functional near-infrared spectroscopy, a groundbreaking technology that allows neuroimaging to be done while a subject is moving.)

Perhaps we can find new interventions that give us more bang for our buck—ones that improve both motor function and cognitive development at the same time,” Gill says. “My hope is that what we learn will help us move toward creating personalized, innovative interventions for children with autism.”

Using high-resolution microscopy and advanced imaging and computational approaches, Zikopoulos is breaking ground on an avenue of research that explores the anatomical and physiological basis of neurodiversity. “We are the only lab in the world that has shown specific structural and molecular changes in the individual axons in brains of people with autism,” he says. “We have identified specific markers and growth proteins that can give us clues about how and when disorders like autism develop. Once we understand the pathology of these networks and pathways, we can be more targeted in our approaches to treating people with autism.”

In addition, Zikopoulos and Barbas, a professor of health sciences, have spent years working together to map the cortical pathways of rhesus monkey brains, yielding critical clues about the possible organization of human brain networks. With the additional help of BU computational neuroscientist and close collaborator Arash Yazdanbakhsh (GIS’05), a research assistant professor, the team is building a digital brain that can be used to simulate human brain activity. “Through these models, we can start disrupting nodes and processes in the network and begin to understand which mechanisms might play a key role in various disorders.”

A Window into the Brain’s Circuitry

A Window into the Brain’s Circuitry

Using high-resolution microscopy and advanced imaging and computational approaches, Zikopoulos is breaking ground on an avenue of research that explores the anatomical and physiological basis of neurodiversity. “We are the only lab in the world that has shown specific structural and molecular changes in the individual axons in brains of people with autism,” he says. “We have identified specific markers and growth proteins that can give us clues about how and when disorders like autism develop. Once we understand the pathology of these networks and pathways, we can be more targeted in our approaches to treating people with autism.”

In addition, Zikopoulos and Barbas, a professor of health sciences, have spent years working together to map the cortical pathways of rhesus monkey brains, yielding critical clues about the possible organization of human brain networks. With the additional help of BU computational neuroscientist and close collaborator Arash Yazdanbakhsh (GIS’05), a research assistant professor, the team is building a digital brain that can be used to simulate human brain activity. “Through these models, we can start disrupting nodes and processes in the network and begin to understand which mechanisms might play a key role in various disorders.”

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A Window into the Brain’s Circuitry
A Place to Practice

SARGENT’S NEW CENTER FOR CLINICAL SIMULATION WILL PREPARE STUDENTS FOR REAL-WORLD PATIENT INTERACTIONS

BY MARC CHALUFOUR

Imagine stepping into a radiology suite for the first time. An anxious patient sits on the table, awaiting an uncomfortable barium swallow test. Their nervous partner waits outside the room. Machines beep and whir. Even the weight of the dense lead aprons feels unfamiliar. In that moment, you need to draw on all of your expertise and empathy—and not get distracted by a new environment.

There’s a wide gulf between classroom learning and performing a high-stakes task. It’s why pilots have long trained in flight simulators that can take the form of video games or realistic cockpits anchored to the ground, before trying to land a jet on a runway. Likewise, only practice can prepare a clinician for the experience of interacting with a flesh-and-blood patient.

Increasingly, that practice is coming through a variety of health-care simulations rather than on the job. Early next year, Sargent will close that classroom-to-clinic gulf when it opens the new Center for Clinical Simulation.

The center will occupy a row of rooms on Sargent’s third floor. Two rooms will act as the sets for simulations. Faculty and staff can stage them with props to mimic acute care hospital floors or radiology suites. There, students can pull on a lead apron and staff can stage them with props to mimic acute care hospital floors or radiology suites.

Simulation rooms will be staged to mimic either acute care hospital rooms (as shown) or radiology suites. The center (opposite) will occupy a row of rooms on Sargent’s third floor.

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"Those simulations will help prepare students to be confident in their clinical skills and contributions to team-based care. Students will be able to apply knowledge and skills in a safe learning environment, where they can receive real-time feedback."

—Craig Slater

Mentis says that the SLHS department previously used computer simulation software to teach students how to work through a diagnosis and how to plan treatments. The physical therapy department was already using actors—typically referred to as standardized patients—so students could practice engaging with patients and obtaining histories before they move on to a clinical setting. In occupational therapy, faculty and students often helped each other practice common maneuvers, like bed-to-wheelchair transfers. And nutrition students have practiced several skills with standardized patients, including nutrition counseling and nutrition-focused physical exams.

Anne Escher (’08), a clinical assistant professor, has seen the use of simulations in OT grow in recent years as studies have shown that they increase students’ confidence and comfort levels. And since the last revision of accreditation standards in 2018, students have been able to earn fieldwork credit for participating in simulations. That meant Sargent could offer online simulations with standardized patients in place of clinical placements during the pandemic. “It was really successful, having students think and interact, in the moment, with someone they didn’t know,” Escher says.

PRACTICING AS A TEAM

Mentis and her SLHS colleagues began planning to expand their own simulation capabilities during the pandemic. That’s when Sargent Dean Christopher Moore, following a series of discussions with each department, recognized that the college needed a state-of-the-art shared space where students could not only practice skills but work together in interdisciplinary teams. The results: the simulations coordinated in the new center will be more holistic and immersive than anything Sargent students have experienced before.

“Those simulations will help prepare students to be confident in their clinical skills and contributions to team-based care,” says Craig Slater, a clinical assistant professor of occupational therapy. “Students will be able to apply knowledge and skills in a safe learning environment, where they can receive real-time feedback.” Slater, Sargent’s director for interprofessional education and practice, will help to design those exercises. Sargent is also in the process of hiring a director for the center.

“It’s ideal for teaching students how to work together, which is what they do in the real world,” says Mentis.

Simulations are much more than practicing hands-on care. Standardized patients can be instructed to challenge students by, for example, questioning their level of experience. Actors may also stand in as family members and partners who are receiving an update on their loved one, and may even require consoling. And faculty will be there to coach students through each of those interactions.

“That’s part of an education in health and rehabilitation sciences that’s sometimes talked about but not taught,” Escher says. “But that is the piece that determines whether an intervention is successful.”
HAGERE YILMA IS WORKING TO REDUCE IRON-DEFICIENCY ANEMIA IN RURAL INDIA
BY JESSICA COLAROSSI

You are what you eat,” as the old saying goes, is not always so simple. Depending on the food you have on hand, your access to nutrition information, and regional customs and traditions, sometimes you are what you don’t eat.

An example: people who don’t eat enough iron-rich foods—such as leafy greens, seafood, or meat—can develop iron-deficiency anemia, a condition in which their blood produces fewer than normal red blood cells, or hemoglobin. Left untreated, it can lead to fatigue, weakness, shortness of breath, and serious complications during pregnancy. The condition is common in all countries, regardless of wealth, according to the World Health Organization. But Southeast Asia has some of the highest rates of iron-deficiency anemia. In India, more than half of women are anemic.

“Women have a hard time recognizing that they are anemic,” says Hagere Yilma, a clinical assistant professor of health sciences and lead researcher for the RANI Project—short for Reduction in Anemia through Normative Innovations—which took place in Odisha, India, from early 2019 to spring 2021. “Rani” translates to “woman” in Hindi. “A lot of the daily lives of women in these areas are characterized by physical labor, like agricultural work and taking care of their families morning and night.” So, at the end of a long, tiresome day, many women don’t think twice about how fatigued they might feel.

Though anyone can develop anemia, it is more common in women who menstruate and women who are pregnant. It is typically combated by eating foods high in iron or, if changing a diet isn’t possible, taking iron supplements. Despite the relative ease of treatment and past public health efforts in India to encourage pregnant women to take iron supplements, rates of anemia are still high.

“Going to a health center or seeking health advice is not an easy thing to do in Odisha,” Yilma says, since many people live in rural areas, far from community health centers and clinics. The RANI Project, which began at George Washington University and partnered with health organizations in Odisha and New Delhi, had the goal of reducing anemia in the area by 10 percent. To do that, Yilma and the team built a transformative public health intervention to raise awareness of anemia, frequently test women for the disorder, provide them with iron supplements as needed, and change the existing stigma and false beliefs about taking iron supplements.

CULTURAL BARRIERS TO DETECTION

Yilma and her research colleagues interviewed more than 4,000 women to learn about their daily habits and the prevailing social norms that prevent women from addressing signs of anemia. They went door to door throughout the region to conduct the interviews and gather necessary data for the intervention to work. Their findings were published in the journal BMC Public Health.

Every home had a different story. Many of the women were married, some had children (interviews were occasionally interrupted by toddlers scampering through the room, Yilma recalls), some were in school, and many lived with their mothers-in-law, since it’s common in the region for mothers to live with their sons.

“It was like admitting tiredness or fatigue was a luxury or an admission of a personal weakness,” Yilma says. “We had to help people realize that if they’re feeling fatigue, it might be a medical concern.”

Odisha women also traditionally are the last in their families to eat, a sign of love and respect. “What’s left over is usually not the most iron-rich, limiting their iron intake,” Yilma says. And their diets may not include meat at all—many households are vegetarian for religious reasons.

From their interviews with women, who ranged in age from 15 to 49, researchers learned that many women thought that only pregnant women should take iron supplements, making the idea of taking them less appealing to women who aren’t pregnant. There was also the idea that taking iron pills while...
pregnant can lead to babies being born larger, which is not a new finding. Researchers have long known that iron deficiency in pregnancy can lead to babies being born larger, which is not a medical concern.

"WE HAD TO HELP PEOPLE REALIZE THAT IF THEY'RE FEELING FATIGUE, IT MIGHT BE A MEDICAL CONCERN."

—BAGAREE YILMA
### The Healing Power of Music, From Bach to Rock

**BY STEVE HOLT**

Christopher Bellows secures a set of headphones over her ears and clips a hard plastic sensor to her left sneaker, then her right. She presses a button on her smartphone and stands up from the wheelchair that’s been her main way of getting around since a hemorrhagic stroke restricted her ability to walk in 2016. Music begins to play, slowly at first, through the headphones—this is already familiar territory, and Bellows starts walking inside her Newcastle, Maine, home.

Holding on to her husband’s arm for support, Bellows strolls along in lockstep with the rhythm of the song. “We do this automatically and subconsciously, it turns out.” If Bellows has trouble matching her steps to the beat, the sensors attached to her shoes alert her to the problem. (Think of the way you involuntarily tap your foot to the song playing in the lobby at the dentist’s office.) As the auditory-motor connection has become clearer, therapists have started using music and beats to help people regain certain movements after a neurological or physical trauma. “So, if you really like Eminem’s ‘Till I Collapse,’ we can use that song to help someone relearn how to walk.”

**A BOOMING FIELD OF STUDY**

Advancements in understanding the ways music benefits human brains and bodies have exploded in recent decades. “The genius of music-based gait training, Awad says, is it can transform how you move, because the other 23 hours of the day you’re not getting treatment.” 

Technologies like this allow us to have an impact on real-world moving, where every step can be therapeutic. Walking to the mailbox can be therapeutic.”

### Lou Awad is Harnessing the Power of Music and Rhythm to Teach Stroke Survivors to Walk Again

**BY STEVE HOLT**

In 2015, neurologic music therapists at Spaulding Rehabilitation Hospital in Boston began treating patients with rhythmic auditory stimulation. “Once they entrain, or synchronize, to the rhythm—which is completely subconscious because of the auditory-motor connection—you can progress the rhythm,” Awad says. “Because the technology uses real-time gait analysis by wearable sensors, the training is adaptive and very individualized.”

In 2015, neurologic music therapists at Spaulding Rehabilitation Hospital in Boston began treating patients with rhythmic auditory stimulation. "So, if you really like Eminem’s ‘Till I Collapse,’ we can use that song to help someone relearn how to walk.”

Awad’s Neuromotor Recovery Laboratory at the University of Maine, Maine, started using to research how neurological diseases and injuries affect the ability of patients to walk to the rhythm of music. As the company’s scientific advisor, he is also assisting MedRhythms with its clinical trials and in preparing the device for the commercial market. Awad says many stroke survivors may soon receive “prescription music” from their healthcare provider to work on their gait when they’re on their own.

Awad’s Neuromotor Recovery Laboratory received its fourth grant in three years from MedRhythms Inc. in September 2021—$1 million to continue studying results and additional applications of the company’s “rhythm-based gait training” technology. (Bellows tested the technology in her role on MedRhythms’ patient advisory board and not as part of a clinical trial or for therapeutic outcomes.)

“Music, and the rhythm of music, is one of the most powerful stimuli on Earth,” Awad says. “The same way a capsule or an injection is the delivery method for some medications, the music is the delivery method for rhythm-based gait training.” He adds that a partnership with Universal Music Group provides MedRhythms with access to the most diverse and culturally rich collection of music ever assembled for the purpose of providing prescription music to patients. When a patient selects a song, a proprietary algorithm screens it to be sure it meets minimum criteria to be used in rehabilitation and then mixes the music into an individualized track for each user.

So, if you really like Eminem’s ‘Till I Collapse,’ we can use that song to help someone relearn how to walk.”

**THE NEXT STEPS**

Results from initial clinical trials—overseen by Awad and his team—have shown that stroke survivors who use MedRhythms’ digital app for gait training are able to walk faster and with a better gait, and also use less energy, after just a single session of training. The team is currently leading a large, multisite trial to support Food and Drug Administration authorization to distribute the technology commercially, which could happen as early as 2023.

The genius of music-based gait training, Awad says, is it can be used for stroke rehabilitation anytime, anywhere. “In our world, in rehab, people often say you can’t come to the clinic three times a week for one hour each time and expect to transform over you move, because the other 23 hours of the day you’re not getting treatment.”

Techonologies like this allow us to have an impact on real-world moving, where every step can be therapeutic. Walking to the mailbox can be therapeutic.”

**$6 MILLION TO HELP COMMERCIALIZE WEARABLE REHAB TECHNOLOGY**

Two Sargent researchers are founding faculty in a new, multi-institutional lab that is developing next-generation robotics and wearable technologies. Sargent’s Lou Awad and Terry Ellis are part of a cross-institutional collaboration of clinicians, engineers, and researchers in Harvard’s Move Lab working on translational research involving wearable sensor and robotic technologies. In March, the Move Lab received a $63 million grant from the Commonwealth of Massachusetts to launch the initiative, which will be matched by another $45 million from BU and Harvard. While centered at Harvard, the Move Lab brings together a variety of multidisciplinary teams—including from BU. Funding from the Commonwealth will initially support four specific areas of study aimed at commercializing treatments and technologies that help people stave off age-related mobility declines and restore movement to those who have lost it. Awad serves as the principal investigator of one of the four areas of study: a project developing a wearable neuroprosthesis to help stroke survivors regain control of their muscles.
W hen stroke patients with the communication disorder aphasia undergo language therapy, results often vary. Some survivors recover their language skills almost completely; others show only partial improvement. The reasons for these vastly different responses are often not readily apparent.

Anne Billot, a PhD student in behavioral neuroscience at the School of Medicine, wanted to find out what factors contributed most significantly to language recovery and if a patient’s response to therapy treatments could be predicted from the outset. In 2021, she teamed up with Swathi Kiran, director of Sargent’s Aphasia Research Laboratory and the James and Cecilia Tse Ying Professor in Neurorehabilitation, and an interdisciplinary team of researchers from BU, Northwestern University, and Johns Hopkins University, to study uses of machine learning for predicting language recovery success in aphasia survivors.

“This is one of the first studies to use this approach in studying people with aphasia,” says Billot (MED’23). “Knowing in advance how people will recover is very important for patients themselves and their family, so that they can plan how their life will be affected. It’s also important for clinicians to choose the best treatments that will be most beneficial for the patients.”

Aphasia is a communication disorder that results from damage to the parts of the brain that control language formulation and processing. For the initial part of the study, 55 stroke survivors with aphasia—who were all at least six months post-stroke—received treatment at BU, Northwestern, or Johns Hopkins for two hours a week over 12 weeks. The researchers had previously conducted behavioral assessments of the participants, who, Billot says, exhibited a wide range of aphasia severity. The therapy targeted areas including naming, syntax processing, and spelling—all of which can become impaired following a stroke. The researchers also took fMRI scans of the patients’ brains to gather sets of neuroimaging data. As expected, at the end of the treatment, some participants nearly fully recovered their language skills. Others did not recover as well.

The researchers found that the best combination of data for predicting language recovery after a stroke included the aphasia severity, where the lesion from the stroke is and its size, demographics such as age and education level, and resting-state connectivity—or how different areas of the brain work together when at rest. And how well that connectivity has been preserved post-stroke is the key predictor in how fully survivors will recover—a breakthrough from the study, according to Billot and Kiran.

“When you have a stroke, you have severe damage to one or more parts of the language regions of the brain,” says Kiran. “What’s remaining, how areas of the brain are in sync with each other, seems to predict how much somebody can recover with intervention. I think this is a big deal because it says what’s remaining is what’s working. And what’s working predicts how much somebody will improve from treatment.”

Billot sees opportunities to expand the study—namely, using machine learning to prescribe the most promising treatment for an aphasia patient. “With this study, we were more looking at which type of data could help us predict how someone will respond overall to language treatments,” Billot says. “The next step is knowing which data we need to use, to look at each type of treatment, and then really reach this kind of precision medicine that is the end goal.”
A FORCE IN THE RECOVERY MOVEMENT

GAYLE BERG REFLECTS ON HOW SARGENT LAUNCHED HER CAREER AS A PSYCHOLOGIST AND THE INSPIRATION THAT KEEPS HER ADVOCATING FOR BETTER ACCESS

BY STEVE HOLT

n the early 1970s, the notion that people living with chronic mental illness could recover and lead relatively normal lives was still novel. The signing of the Community Mental Health Act of 1963 by President John F. Kennedy (Hon.’55), along with the movement to remove Americans from institutions and asylums, was considered revolutionary in providing needed mental health services to communities across the country. While the effort was never adequately funded, it created new opportunities for counselor training programs and rehabilitation research. A decade later, the Rehabilitation Act of 1973 banned discrimination on the basis of disability in any federal agency or program receiving federal funding. That year, Gayle Berg, an enthusiastic college graduate from Long Island, enrolled in Sargent to pursue a master’s of science in rehabilitation counseling, where a new specialization in psychiatric rehabilitation had been launched.

Berg (’74) obtained a teaching assistantship under William A. Anthony, founder of the Center for Psychiatric Rehabilitation (page 4) and considered by many to be the “father of the recovery movement.” During her time at Sargent, Berg also worked part-time for a nonprofit that provided services to individuals with intellectual disabilities, putting lessons from Anthony and other professors into immediate use.

“Bill was creating the processes and mechanisms for systemic and personal transformation,” Berg says. “He was demonstrating that recovery is possible, and his pioneering efforts were creating a major paradigm shift in treatment and service delivery, which was so badly needed in our country at that time.”

Berg founded Psychological Solutions, her New York–based practice, on Anthony’s recovery movement principles: helping people with mental illness participate in society. She has worked to improve and expand the availability of mental health care as a practicing psychologist and member of many advocacy and governance organizations, and has ardently supported Sargent’s training of new mental health care professionals who are committed to recovery.

THE NEEDLE MOVES ON CARE AND POLICY

After graduating, Berg returned to New York to see if she could apply the principles of psychiatric rehabilitation in a hospital setting, which she says had been operating like a “revolving door” for people with psychiatric challenges. She joined the staff of a prominent New York City teaching hospital, where she helped to develop an innovative day treatment center of services for individuals in mental health crisis or living with psychological conditions. She and her colleagues implemented a work readiness training program as well as treatment-focused groups for families and patients. They also started a group home for patients to learn independent living skills. “We moved the needle big time at that moment in this hospital,” says Berg, who earned a PhD in psychology from New York University while working full-time at the hospital.

She eventually left the hospital and in 1984 founded Psychological Solutions, a private psychology practice in Roslyn Heights, N.Y. Here, she would confront the negative impact that a lack of funding for care has on access to services for these individuals seeking psychological help. “Insurance carriers were still paying for 30 days of inpatient stays,” she says, “but not for outpatient mental health services or care.” This spurred Berg’s work as a mental health advocate to improve and expand access to quality mental health care. For decades she along with others lobbied Congress for equal treatment, or parity, of mental health conditions and substance use disorders in insurance plans, and in 2008, Congress passed the Paul Wellstone and Pete Domenici Mental Health Parity and Addiction Equality Act. Now, someone living with mental health conditions like depression or schizophrenia could no longer be discriminated against by insurance companies. Their coverage is now required to be on par with their plans’ reimbursements for treatment of diabetes or other medical conditions.

CONTINUING THE WORK

Besides her advocacy work, Berg has served on several boards and agencies to promote access to quality mental health care. She continues to fund the training of new mental health professionals through her support of BU, where she serves as a member of the Sargent Dean’s Advisory Board and the University Advisory Board. In 2009, Berg made a $1.5 million gift to Sargent—at the time the largest single donation in the college’s history—to create an endowed fund for interdisciplinary research in psychiatric rehabilitation.

Berg says she won’t stop advocating and giving of her time and resources “until the true promise of recovery is realized and there is quality mental health care easily accessible to everyone in need.” She says the mental health system needs to include a comprehensive array of evidence-based services, including prevention, early detection and evaluation, treatment, and aftercare. Looking back on her role in shaping the changes in mental health care over the past four decades, Berg feels fortunate to have been able to pursue her passion and to have played her part in transforming a system that has been stressed in recent years: “I’ve learned that with crisis comes opportunity, and the pandemic—with its concurrent mental health crisis—creates the possibility where a vision of recovery can be turned into reality.”

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Orthopedic Surgeon
Steven Gorin Helps His Patients Get Back to Their Lives

By Mara Sassoon

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hortly after he found out he was accepted to BU, Steven Gorin flew to Boston with his father to take a campus tour. It was a cold, gray, and rainy early spring day—a far cry from the usually warm, sunny weather the South Florida native was used to. Even so, Gorin says he felt at home as he walked down Comm Ave. “For whatever reason, I just fell in love. The campus, the tour—it seemed right,” says Gorin (‘94). At the end of the tour, he proclaimed to his father that he would be attending BU.

That decision set him on a path to becoming one of the top-ranked orthopedic surgeons in Miami.

While Gorin entered BU wanting to follow in the footsteps of his cardiologist father, he also had a passion for history and archaeology. He opted to major in archaeology while taking all of the prerequisites to attend medical school, but after one semester, he felt a little aimless, unsure if it was the best choice for him. One day, he was sitting in his first-year chemistry class when one of his friends suggested he look into Sargent. It sounded like the right fit, and he made the switch. “One draw of Sargent, for me, was that it was very streamlined. I knew exactly what classes I needed to take each year. I also thought it would better help me get into medical school.”

Gorin transferred into Sargent’s bachelor’s in human physiology program, which has all medical school prerequisites built into its curriculum. Classes in gross human anatomy and exercise physiology planted the seeds for his interest in helping people recover from sports-related injuries. Gorin says he still draws from his Sargent education today, including Professor Emeritus Whitney R. Powers’ anatomy lessons, which, he says, are “the backbone of my knowledge and understanding of the human body and its function.”

Helping People Live Pain-Free

Gorin returned to Florida to get his master’s degree in sports medicine from the University of Miami before starting medical school at Nova Southeastern University in Davie, Fla. He still intended to become a cardiologist just like his father—until he finished his orthopedics rotation in his fourth year. “I went to my dad and said, ‘I’m lost.’ I loved my cardiology rotation, and I thought this was what I wanted to do my whole life. I grew up with it,” Gorin says. “But I really loved my ortho rotation and being in the operating room. The idea that I could directly fix someone’s pathology or injury was very appealing.” His father encouraged him to do what would make him the happiest.

After his residency, Gorin completed a fellowship in orthopedic sports medicine, which gave him the opportunity to work as the physician for the various athletic teams at Rowan University in New Jersey. The fellowship also allowed Gorin, who played on the club volleyball team at BU, to be one of the physicians for the Association of Volleyball Professionals, the largest professional beach volleyball league in the US, as well as for the Jose Cuervo Pro Beach Volleyball Series. He also spent a few years postfellowship working with US Youth Soccer, treating young athletes who were training in Florida.

Today, Gorin is an orthopedic surgeon at the Advanced Orthopedic & Sports Medicine Institute, a practice he cofounded in Aventura, Fla. Ranked highly by U.S. News & World Report, the institute sees patients from “age 2 to age 102” for all kinds of injuries, “from hand to foot.” He primarily treats sports-related injuries. The most common are those affecting the knees, shoulders, and ankles—such as meniscus tears, rotator cuff tears, and ankle sprains. He also does joint replacements.

As Gorin grew his practice over the years, he realized he still had a lot to learn about the business side of medicine. “When you go to medical school, you learn medicine, but you don’t really learn anything about the business of medicine,” he says. In 2018, he received an MBA from the University of Miami.

For one, since he began his practice, he says the use of biologic agents—substances from a patient’s tissues or from donors—over steroids to decrease inflammation has become a more commonplace practice. He also notes that “the understanding of the mechanics around the entire shoulder joint, including the scapula, has grown by leaps and bounds.”

Gorin says his work continues to inspire him every day. “I have seen people who play basketball, baseball, soccer, football, and dance—to name a few—who have come to the institute concerned about their specific injury. Through a team effort, we have been able to get them back to their sport and oftentimes have been able to avoid surgery unless it is completely necessary. The beauty of orthopedics is we’re able to help people get out of pain and get back to their normal daily lives,” he says. “With surgery, we can directly affect somebody’s life. When I go in and fix something, I know I’ve fixed it. And even if it’s something not operative, it’s gratifying to help people get out of pain or discomfort and be active again. I know it’s so important.”

“Through a team effort, we have been able to get [patients] back to their sport and oftentimes avoid surgery unless it is completely necessary.”

ORTHOPEDIC SURGEON
STEVEN GORIN HELPS HIS PATIENTS GET BACK TO THEIR LIVES

BY MARA SASSOON

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