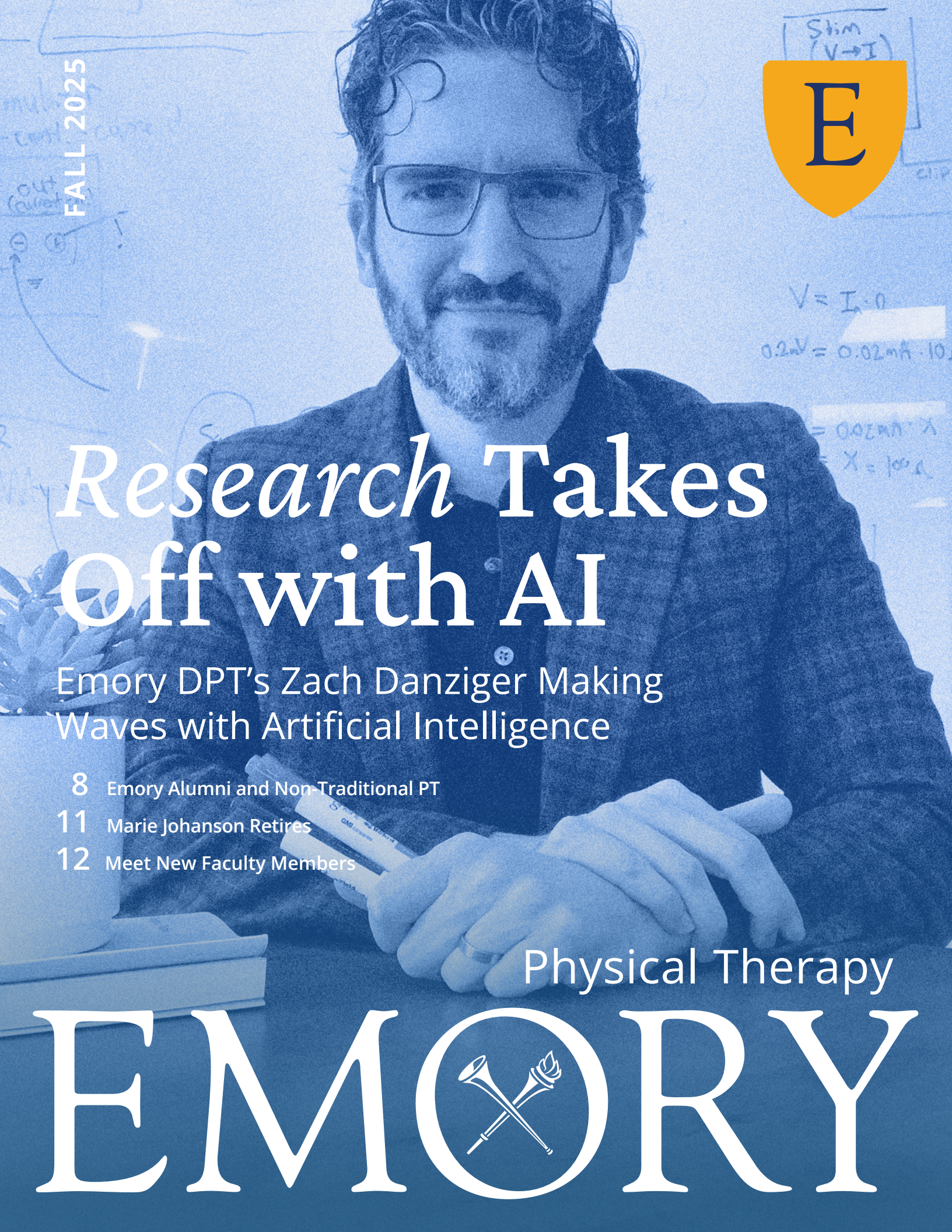


FALL 2025

Research Takes Off with AI

Emory DPT's Zach Danziger Making Waves with Artificial Intelligence

Physical Therapy

EMORY

FROM THE DIRECTOR

Leading Edge Research Projects Help Keep Emory DPT Among Nation's Best

As a researcher, one of the primary reasons that I came to the Emory Division of Physical Therapy three years ago was because of its world-renowned reputation and passion for scientific research. While teaching the next generation of physical therapists will always be our top priority, it's the research that drives our profession forward and further enhances what we teach in the classroom.

While the work that we do in the lab can be time-consuming, full of setbacks and with little fanfare, the opportunity to make the world a better place is the fuel that drives curiosity and discovery. And in my opinion, it also distinguishes our division as one of the leading doctoral-level PT programs in the country.

That's why, in this year's edition of *Emory Physical Therapy*, we are highlighting a couple of Emory DPT research projects that blend traditional research methods with artificial intelligence in the areas of bladder dysfunction and gait rehabilitation for patients with stroke. While the methods are new, the motivation is not: To change lives for the better.

I'm really proud of the work that Emory Department of Rehabilitation Medicine Associate Professor Zachary Danziger, PhD, and his multi-disciplinary team are doing to address an issue that affects millions of Americans — bladder dysfunction.

Zach began this project over 10 years ago as a postdoctoral scholar at Duke, but it was his idea to incorporate AI into the work that garnered the attention and financial support of the National Institutes of Health (NIH). Today, Zach has a computational theory that he is excited to test in both the lab and patient clinics.

While Zach is well-known in research circles for his work on the lower urinary tract, Emory researchers Trisha Kesar, PhD, and Lena Ting, PhD, both Emory DPT faculty members, are leading national authorities in the field of gait rehabilitation.

For millions of stroke survivors, regaining the ability to walk without fear of falling is one of the most challenging and critical areas of rehabilitation. Trisha, who leads Emory's cutting-edge 3D motion capture lab, and Lena, an expert on "gait signatures," are combining their expertise with AI to take their research on walking patterns for patients with stroke to a new level with the end goal of giving clinicians the tools and data needed to improve patient outcomes.

Emory DPT is so fortunate to have such a dedicated, talented group of faculty researchers passionate about strengthening our profession not only in the classroom, but in the research lab.

While physical therapy is most often equated with outpatient orthopedic clinics and sports rehab facilities, I love the fact that Emory DPT alumni are blazing trails in non-traditional areas of PT such as dance and vestibular PT.

On page 8, you will enjoy reading about two Emory alumni, Mandy Blackmon and Emma Faulkner, who together, are revolutionizing the field of dance on a worldwide level through the use of physical therapy. Mandy and Emma formed an unlikely friendship and business partnership to become leaders in the evolving dance medicine arena.

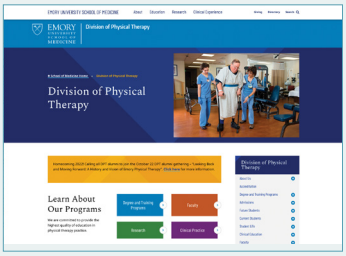
We also highlight 2010 Emory DPT graduate Julia Hurtado who, two years ago, started her own Metro Atlanta-based mobile clinic specializing in vestibular rehabilitation. For the millions of people who struggle with dizziness and balance issues, vestibular rehab is emerging into the mainstream as a safe, effective form of treatment because of practitioners like Julia.

On page 11, we pay tribute to the wonderful career of long-time Emory DPT Professor Marie Johanson, who retired at the end of August. Marie not only impacted thousands of students in the classroom since she joined Emory DPT in 1998, but her calm, steady leadership as the division's interim director during the COVID pandemic will never be forgotten. While Marie is a gifted physical therapist, teacher and leader, she is an even better person and we will greatly miss her.

I hope you enjoy this publication and sincerely thank you for your ongoing support of the Emory Division of Physical Therapy. In closing, I wanted to share this quote from graduate Julia Hurtado that captures what it means to be an Emory DPT student and alum. "From the moment I interviewed at Emory, it was instilled in me that success was an inevitability. It was like, 'We're going to make sure that you succeed because you have a name to uphold.'" Well said, Julia.

George Fulk, PT, PhD, FAPTA
Professor and Director

Visit us online at **emorydpt.org**



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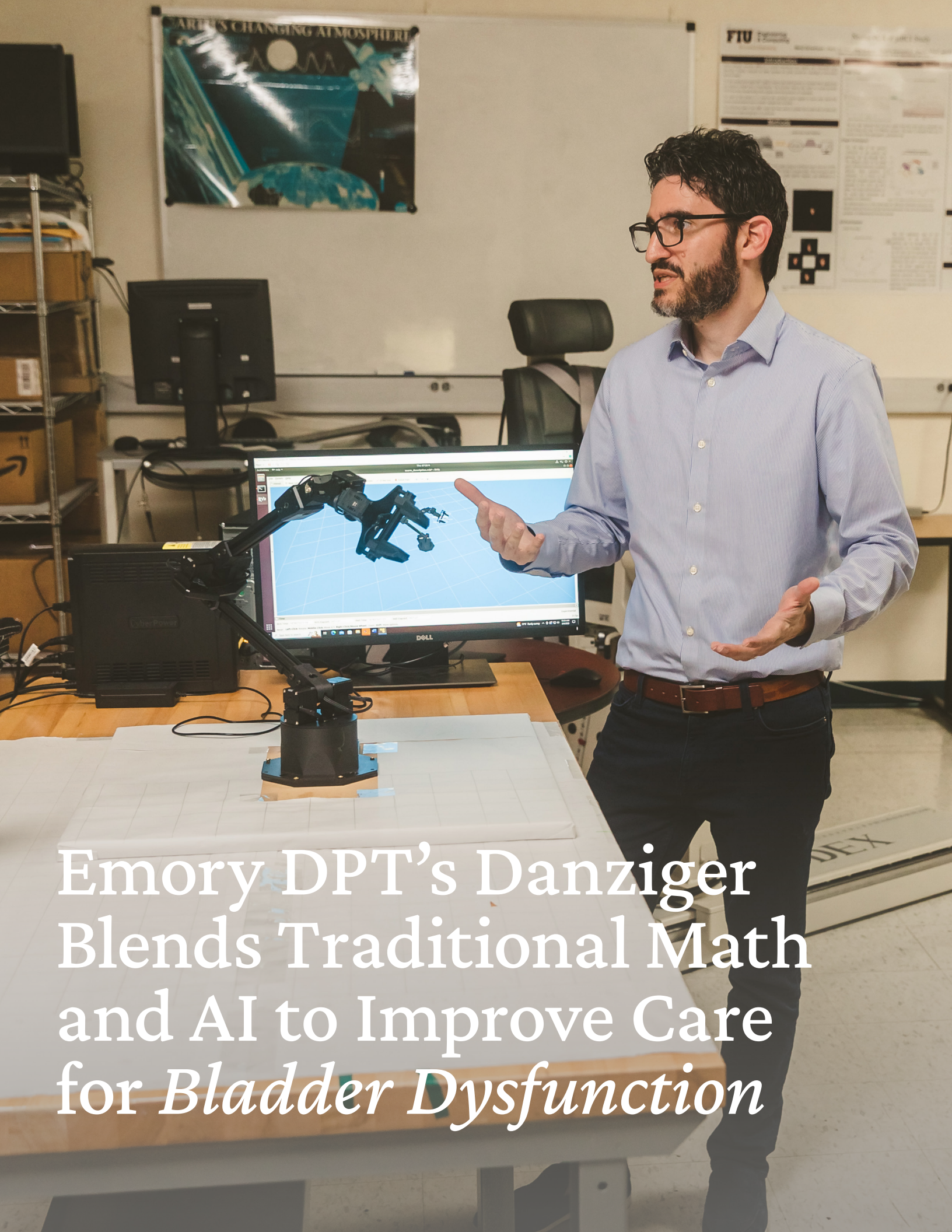
Emory Physical Therapy

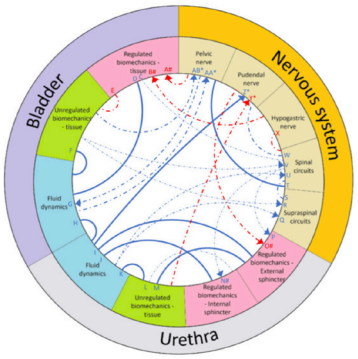
In this *Issue*

On the Cover

Emory Department of Rehabilitation Medicine Associate Professor Zachary Danziger, PhD



Emory DPT's Danziger Blends Traditional Math and AI to Improve Care for *Bladder Dysfunction*



It's ok to talk about back and joint pains at a dinner party but bring up urinary incontinence and things get awkward really fast. While Emory Department of Rehabilitation Medicine Associate Professor Zachary Danziger, PhD, understands why many refrain from talking about peeing to protect their personal dignity, he also knows that statistically, seniors are much more likely to have an underactive bladder than a herniated disc. He also cites polls that reveal that people with neurological deficits are more worried about incontinence than even walking.

"When you look around at what's available, you can do a lot in a wheelchair now in the United States," Danziger explained. "But if you have to leave to go to the toilet every 20 minutes, what job are you holding down?"

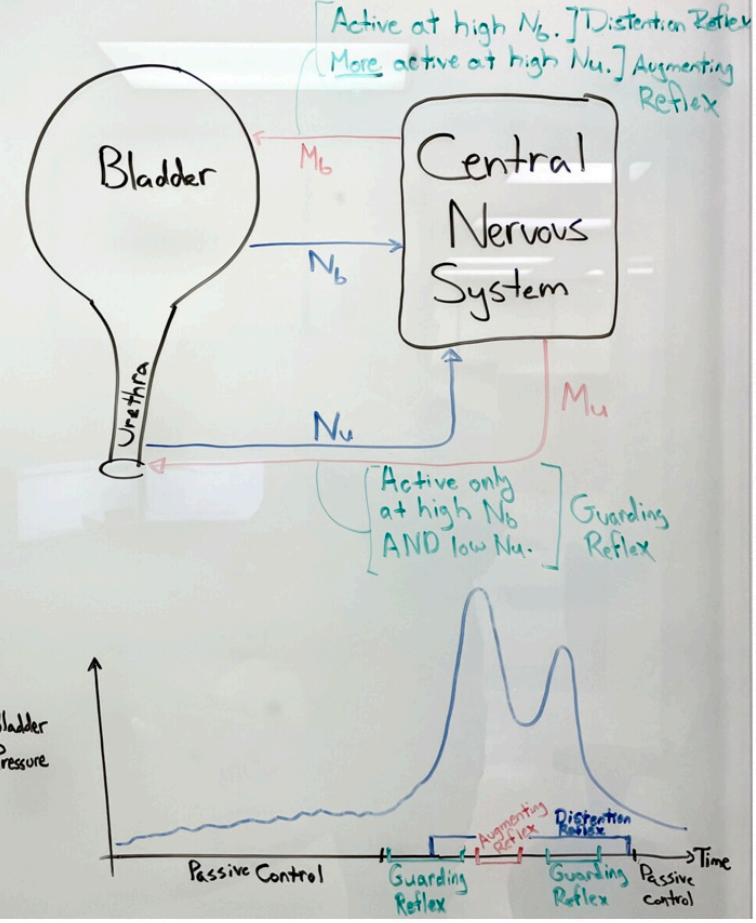
That's why Danziger has invested a big part of his research career on a pet project that he started while serving as a post-doctoral scholar at Duke University about 10 years ago that has since evolved into a National Institutes of Health-funded, multi-disciplinary effort involving team members throughout the United States. With the incorporation of AI into the project, enhancing the team's ability to vet therapies much quicker and cheaper, Danziger is optimistic that major breakthroughs in treating or reversing bladder dysfunction are not far away.

As all medical researchers know, the path to discovery is never linear and is often accompanied by feelings of frustration and despair. While at Duke, Danziger, a biomedical engineer, used math and lab experiments to create what he described as a "beautiful model" of how pieces of the nervous system work with the urinary tract.

"Essentially, any kind of pathology you could think of that involves the nervous system also affects the bladder like Parkinson's disease, Alzheimer's, natural aging and neuropathy you get from diabetes," he explained. "For a long time, I was trying to map out these circuits that control the urinary tract with the idea that we could develop therapies that target the nerves to reverse some of the symptoms."

But Danziger soon realized that if it took him three to five years to figure out one component of the system, there was no way that he, or even a large team, could map out every circuit of a very complex system.

"The trick with computational models is that if you're missing any part of it, the whole thing breaks," Danziger said. "Imagine that the lower urinary tract is like a clock with gears. If you're



missing one gear, it's over."

Around 2019, as AI was arriving on the research scene and being used as a powerful supplement, Danziger, who had moved to Florida International University (FIU) as an assistant professor in biomedical engineering, had an idea.

"What if we took everything we did know about the urinary tract and gave that its own equation?" he explained. "And then the stuff we didn't know, we said, 'Hey, maybe AI can just fill in the missing pieces.'"

The marriage of traditional mathematics and artificial intelligence was the idea that eliminated the need for hours and hours of laboratory experiments and jump-started the project. Danziger assembled a team of mathematicians and AI researchers and landed a meeting at the director's office of the NIH. They left with a two-year, $2 million contract to design a proof of concept.

Since then, Danziger has assembled a team from Emory, an AI team from Northeastern University, an applied mathematics team from the University of Maine and a group of computational biologists from the University of Wisconsin. As the project leader who has experience in a number of areas including physiology and physical therapy, Danziger described one of his key roles as a "translator" between the diverse parties rephrasing information in ways that everyone could understand. The partnership has flourished. The mixture of mathematics and AI has created approximations to the many missing pieces that had served as roadblocks to Danziger in the past.

"And, because we stipulated that we knew this stylized urinary tract ahead of time, we could check whether the answers were right," Danziger said. "Whereas, in the real world, if we don't know something, we don't know it. We can't really check if we're getting the right answer at the same level of specificity. But this was enough."

After two years, the NIH was so impressed with the work, it awarded Danziger and his team a five-year RO1 grant that takes the project into 2027. Today, Danziger has what he described as the "first-ever plausible computational theory of how the nervous system uses reflexes to control the lower urinary tract." The next step, he said, is testing hypotheses computationally and optimizing therapies that directly address what happens to the lower urinary tract when disease enters the body. Danziger recently presented a proof of principle at The Association for the Advancement of Artificial Intelligence (AAAI) conference.

The end goal of this ambitious, complex project? It's to develop a new method to prototype therapy for people suffering with urinary incontinence.

"Suppose that you have an overactive bladder which is the one they advertise on all the football games at halftime," Danziger explained. "Well, suppose that we have a new drug compound or a new nerve stimulator that we think has the potential to help with this issue. So, rather than go through a decade of animal experiments and maybe come out of them with a half a dozen studies that we could start building on, we can do 10,000 experiments in a few months with this AI model and then pick the best ones to follow up on in the clinic."

Danziger, who left FIU to join the Emory Division of Physical Therapy in November 2023, credits Emory, especially the division's director, George Fulk, for believing in his research and giving him the leeway to focus on his ground-breaking research without the added pressure to teach as many classes as other faculty.

"George has been really supportive and is a leader who truly understands the importance of research," Danziger said. "He has the vision to understand that if you ever want anything to change in practice from how it is right now, research is the way to go."

While Danziger continues the work that began as a young postdoc scholar, he remains motivated by the opportunity to improve the lives of hundreds of thousands of people suffering from urinary incontinence.

"Oh man, that's the good stuff," he said, "That's why I'm in this business. This is a chance to give something truly useful and new to this civilization that gave me everything through no fault or effort of my own when I was born into it. This is why you do the long hours. It's so you can get the few truly useful ideas that you have out into the world." **EPT**

Emory DPT Faculty Kesar and Ting *Using AI* to Treat Mobility Disorders

Professor of Biomedical Engineering and Rehabilitation Medicine Lena Ting, PhD, leads Emory's neuromechanics lab and is a leader in the study of "gait signatures."

Emory Division of Physical Therapy Associate Professor Trisha Kesar, PT, PhD, has spent most of her career in research trying to develop rehabilitation treatments to improve walking for stroke survivors and older adults. She recently completed a National Institutes of Health-funded study comparing walking training interventions for post-stroke individuals and leads a cutting-edge 3D motion capture lab at Emory that includes force platforms, multiple motion capture cameras, electrical stimulators, muscle sensors and measures of brain activity.

The problem is not a lack of movement data — Kesar says that 3D motion capture generates tables of data with multiple variables that feature different time series points — the challenge has always been making sense of the data.

That may change soon. In a collaboration with long-time Professor of Biomedical Engineering and Rehabilitation Medicine Lena Ting, PhD, who leads Emory's neuromechanics lab, Kesar sees a potential breakthrough in those research efforts using artificial intelligence, specifically a machine learning approach called an artificial neural network model, to expedite and simplify the creation of "gait maps." Gait maps provide a simplified and personalized picture of walking patterns of both stroke survivors and able-bodied people who have never had a stroke.

"We can input all of this complex gait data from about 50 people with stroke into this model and it develops parameters and mathematical equations of how this person is moving in that map space," Kesar explained. "And then the beauty of this is that it gives us an output that we can simplify. We take all the information about the person — hips, knees, ankles — throughout the gait cycle. So, a short 30-second walking trial gives you thousands of reams of data times 15 different ways of looking at it. You take all of that and you can produce a gait map. Using that, we can measure and visualize where the person is in recovery and hopefully, then we can treat them, rehabilitate them and get them closer to normal."

"We can input all of this complex gait data from about 50 people with stroke into this model and it develops parameters and mathematical equations of how this person is moving in that map space."

A key element of this, the identification of unique "gait signatures" for each person, is a staple of Ting's research. Just as every individual has a unique handwriting signature, Ting says that every person has a gait signature — a way of walking unique to that person based on things like where they grew up, what sports or social activities they participated and their occupation. It's why we can identify a person just by the way they walk.

Ting and Kesar recently co-published a paper on "ethnokinesiology" which posits that our social and physical reactions to

our environments play major roles in sculpting our movements. Ting says by identifying a person's gait signature, researchers and clinicians may identify not only if certain people will respond to an impairment, but also how they will best respond to treatments.

"With ballet dancers, we showed that they have differences in the way they coordinate their muscles when they're doing a difficult task like walking across a beam," Ting explained. "But those are still in place when they're just walking normally which gives us the ability to actually show that they're walking in consistently different units of coordination than somebody who's not a dancer, both when they're doing something hard and in every-day life."

By combining gait signature data and machine learning, Kesar explained that the team can "synthesize, coagulate and collate" scores of data variables and finally make sense of them, giving them the tools to "put all of the pieces of the puzzle together."

"By looking at gait signature data we've collected for a person," Kesar said, "it helps us understand your gait cycle so we can go back, dissect it and say, 'Hip and knee are not moving together in the swing phase when your foot is in the air — that's the main problem.' So, we should focus on that for treatment. It can also help us visualize walking patterns more holistically which helps clinicians and provides guidance for rehab."

While Kesar's motion capture lab is currently the gold standard for gathering movement data — the technology can break a person's movements into different variables with high accuracy — she, along with Emory Biomedical Informatics Assistant Professor Hyeok Kwon, are working on another AI-driven approach that uses simple smartphone videos to analyze gait patterns in people with stroke.

"The goal would be to take a video anywhere — it doesn't have to be in a lab — and we can generate these pose-estimated trajectory positions of different points on our body," Kesar explained. "We then can input that data into a gait signature or other AI model. Dr. Kwon's team of computer scientists can compress these models and make them easier to run on mobile devices.

"Instead of just taking a video or watching you walk, now I have valuable mathematical, quantitative information and the clinician has numbers and objective data they can use but they don't have to wait three weeks, or even three hours, to get that answer."

At this point, the prototype mobile-based gait analysis app, developed by Kwon, is still more vision than reality. Kesar and Kwon are writing grant proposals for the app and will soon start surveying clinicians to determine the kind of information that would be useful to them as well as the best formats to present the data visually.

But the long-term vision is that if they can eventually bring the app to clinical and home settings, it could open the door for many people with stroke, who typically wouldn't visit Kesar's motion capture lab in Atlanta, to be prescribed treatments from clinicians in a faster, cost-effective and more accessible way. Making these technologies accessible will also lead to bigger datasets and better patient outcomes.

A patient is tested at Emory's innovative 3D motion capture lab which helps people with stroke learn how to walk again. The lab is led by Emory Department of Rehabilitation Medicine Associate Professor Trisha Kesar, PT, PhD.

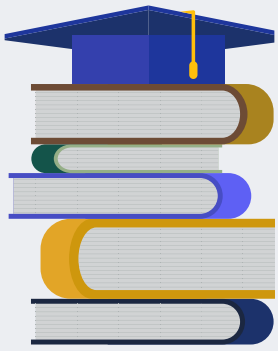
While both Kesar and Ting are embracing AI in the research lab with the idea of creating better ways to assess, treat and prevent mobility disorders, they are both committed to enhancing the value of the clinical therapist — not replacing them.

"It's not that we're trying to replace clinicians," said Ting, "but we're trying to give them a third eye and have another confirmation of the things that they may know and the kinds of information that they might want to pass on to another therapist that we currently cannot measure objectively."

Kesar, who is a physical therapist, jokes that she wants AI to do her laundry and other tedious tasks but not the creative things that bring people joy and purpose in life. Like Ting, she hopes that future physical therapists will embrace AI technologies to augment their clinical practices.

"AI has a lot of potential, but I think we should be very deliberate and purposeful in how we use it," she said. **EPT**

Emory Division of Physical Therapy
By the Numbers



28

Peer-reviewed articles published

Conference presentations

Books/book chapters

Total Amount of Grant Funding

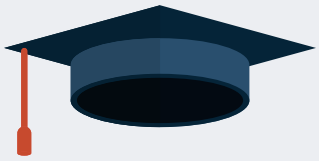
$67,231,844

$66,007,523

Total funding from National Institutes of Health (NIH)

Welcoming the Emory DPT Class of 2028:

This year, the program welcomed **52 new students**, with 77% identifying as female and 23% as male. The incoming cohort represents **20 U.S. states and three countries**—South Korea, China, and Taiwan. Among the most common undergraduate majors are Exercise Science and Kinesiology.



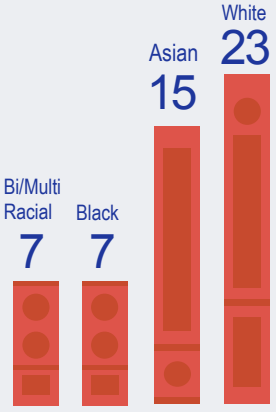
THE CLASS OF 2028 BY GENDER

23% MALE
77% FEMALE

Ranked #4 *Nationally*

by **U.S. News & World Report (2024),** the Emory University Doctor of Physical Therapy (DPT) program is uniquely structured to cultivate exceptional clinical skills, creativity, self-reflection, and compassion, preparing students to become outstanding professionals in the field.

BREAKDOWN BY RACE AND ETHNICITY



Emory DPT Alumni Blackmon and Faulkner *Blaze Trail* for Dance Medicine Worldwide

Since graduating from the Emory Division of Physical Therapy in 2005, Mandy Blackmon (left) has focused primarily on providing PT to Atlanta's dance community.

When she was 12 years old, Emma Faulkner, PT, DPT, OCS, who began dancing at the age of 2, declared that she would be a physical therapist when she grew up because she knew what dancers needed. In 2013, after finishing her professional dancing career in Los Angeles, Faulkner came to Atlanta to pursue her doctorate at the Emory Division of Physical Therapy.

After hearing about former dancer 2005 Emory DPT graduate Mandy Blackmon, PT, DPT, OCS, CMTPT/DN, who was treating several area dancers, Faulkner set out to find and meet her. Hearing that Blackmon was presenting at a women's health conference, Faulkner volunteered to work at the event and finally met Blackmon. She recalled the initial conversation.

"I went up and introduced myself and said, 'Hi, I'm Emma and I really want to do what you do. Can I bring you coffee? Can you teach me things? Can you mentor me? Can I come shadow you sometime?' And she was like, 'Yeah, sure.' So, I started shadowing her early on in my PT career."

While the relationship began as a true mentor/mentee arrangement — Faulkner recalls bringing Blackmon coffee, observing treatment and cleaning treatment tables — Faulker did a directed study in dance medicine with Blackmon throughout her third year at Emory and graduated in 2015.

Today, nearly 13 years later after their first meeting, Blackmon and Faulker remain close and in 2018, partnered to start Atlanta Dance Medicine (ADM) to provide education at the national and international levels and to meet the physical therapy needs of Atlanta's growing dance community. While most of their clients are in ballet, they also treat other dancers such as those specializing in hip-hop, contemporary, ballroom and Irish dancing.

They have 13 PT contractors in four locations in Metro Atlanta and just finished their 11th season providing PT to the Atlanta Ballet. They are in their first season as the physical therapy providers of the Georgia Ballet and have a satellite location in a Marietta, Ga. studio. Their newest location, which recently opened in Brookwood Hills, is a full-service health and wellness center for all types of performing artists in the Atlanta area.

"I've loved Emma since the moment I met her," Blackmon said. "We are actually very different, but we are a really good balance for one another. While we are a great 'yin and yang' to each other in the dance world, we spend a lot of time together outside of work too. We play Mahjong, we're in the same book club and we travel the world

together speaking at conferences. I would say we're best friends."

While Blackmon describes Faulkner as the better clinician, Faulkner says Blackmon is more relational than her. But together, they share a passion for elevating the standard of care for dancers, not just in Atlanta, but worldwide. They both are very involved and serve in leadership in groups like the International Association for Dance Medicine and Science, the Performing Arts Medical Association and the Dance USA Task Force on Dancer Health.

They are well-known throughout the tightly knit international dance community for their innovative presentations at conferences in several different countries challenging dance companies to dedicate resources to the health and safety of their dancers just as collegiate and professional athletic programs care for their athletes. Various published studies show that ballet dancers have an extremely high incidence of musculoskeletal injuries, most caused by overuse.

"While professional athletes have so many resources at their disposal including dieticians, physical therapists, athletic trainers and physicians, the dance world, because they're kind of stuck in the historical context of 'this is the way it's always been done,' can be very antiquated and old school," Blackmon said. "But also, financial resources are a major issue because the arts are just not as well funded, especially in the United States, as professional sports. Even though we are doing the research and putting the science out there, there is about a 20-year lag behind the sports medicine world."

Faulkner agreed saying that because ballet training is so rooted in tradition, the exercises, patterns and orders in training don't come close to matching up with the physical demands of the job.

"They're doing these crazy sets where they're lifting and flipping people, jumping on and off chairs and carrying boxes," Faulker said. "Ballet class doesn't prepare you for that so you're not training specifically for what you have to do."

And to make matters worse, she added, the mentality in the dance field is that "the show must go on" — even with injuries.

"In dance, it's sort of that 'no pain, no gain' attitude," Faulkner explained. "If you can walk, you can dance. Is it bleeding or broken? If not, get on stage."

With their physical therapy expertise, Blackmon and Faulkner aren't trying to put injured dancers on the sideline jeopardizing their ability to make a living, but to limit their training and stage performances to specific dance movements to let their injuries heal.

In 2016, a young dancer came to Faulkner looking for help three or four months after hip labrum surgery. She had a show coming up and sitting out was not an option.

"I literally went to rehearsal with her one day and looked at the choreography and sat down with her and was like, 'Alright, you cannot do any of that but this part where they're just walking across the stage doing arms, you can do that,'" Faulkner recalled. "There was nothing hip related. It was all upper body.

"I went to the show and afterwards, she came out and cried because she was so happy. She's like, 'I didn't think I was going to get to perform, but I did. It wasn't exactly what I wanted to do, but I was on stage.' So, one of the things that I love so much about being a dance medicine physical therapist is just the creativity and the problem solving and figuring out ways to make things work."

As much as Atlanta Dance Medicine has grown, both Blackmon and Faulkner still run their own separate private physical therapy practices in Decatur near the Emory campus and plan to keep it that way. But through ADM, they will continue to focus on providing dance physical therapy education at conferences across the world while locally, connecting dancers with younger physical therapists who have the flexibility to treat on evenings and weekends when so many dancers need physical therapy.

"It's almost like we've trained an army to help us treat," Blackmon said. "One of our main goals in starting ADM was to not make it competitive, but to bring people along with us and give physical therapy colleagues an opportunity to treat dancers in this city."

While Blackmon and Faulkner are making major strides in changing the way the international performing arts community meets the needs of its performers, both credit the Emory Division of Physical Therapy for connecting them and encouraging a PT path that was outside of the norm.

"The electives were great and being able to have a directed study and choose what I wanted to do in that third year was super, super important," Faulkner said. "There were a handful of professors who I had there who were also outside-of-the-box thinkers and had very creative, strategizing minds that influenced me."

Blackmon, who has been teaching dance medicine-directed study students from Emory PT since 2013, credits Emory for helping them build a network of physical therapists who are as passionate about dance medicine as they are.

"The electives and allowing the students to blaze their own paths and come up with different options for what they want to focus on in those last two semesters were truly make-or-break for us," she said.

EPT

Best friends Blackmon and Faulkner (right) created Atlanta Dance Medicine in 2018 and have become well known in the international dance community for their PT expertise.

Emory Alum Julia Hurtado Blazes Trail in *Vestibular Rehab*

2010 Emory DPT graduate Julia Hurtado started a vestibular rehabilitation practice in 2023 to help people improve balance and coordination and reduce dizziness.

Like many students who enroll in the Emory Doctor of Physical Therapy program, Julia Hurtado's long-term plan was to be part of a physical therapy practice that treated athletes with musculoskeletal problems. But everything changed when she took her first neuroscience course at Emory.

"I was surprised by how interested I became in it," Hurtado, PT, DPT, NCS, recalls. "I loved the idea of being able to train our bodies through our brains and our brains through our bodies and Emory has such an exceptional vestibular program."

It also didn't hurt that former Emory Division of Physical Therapy Director Susan Herdman, PhD, PT, FAPTA, who Hurtado says "literally wrote the book on vestibular rehab," mentored Hurtado during her three years at Emory.

Hurtado graduated from Emory in 2010 and later became board-certified in neurologic physical therapy. Today, she runs the Roswell, Ga.-based Brainwell, a cash-based, mobile practice she started in the fall of 2023, specializing in neurorehabilitation and vestibular physical therapy.

Prior to starting Brainwell, Hurtado, who grew up in South Florida, says that every career step she took laid the foundation that was needed to start her own practice.

After graduating from Emory, Hurtado's first job was at Grady Memorial Hospital, a huge Level 1 trauma center in downtown Atlanta that, at the time, had its therapists rotate through different specialties to get acclimated to different settings. Hurtado started in trauma working with critically injured patients, primarily by car and motorcycle accidents.

"For a lot of trauma patients, their biggest complaint was that they were dizzy and we know that there is a high prevalence of BPPV (Benign Paroxysmal Positional Vertigo) among people who had a high impact such as a car accident," Hurtado explained. "I was so excited that was something I could treat and help them enhance their quality of life."

After a year, Hurtado left Grady and moved to WellStar Kennestone Hospital in Marietta, Ga., where she served in the hospital's outpatient neuro program helping to develop its vestibular program.

In 2017, she moved to the Shepherd Center in Atlanta, one of the nation's leading hospitals for people with spinal cord and brain injuries, where she helped start the center's complex concussion clinic which utilizes primarily vestibular therapy.

"When you think about vestibular rehab, most people think about dizziness, balance and gait for older adults who are at risk for falls," Hurtado said. "But at Shepherd, I was working with veterans and Division 1 athletes and high-functioning people trying to return them to a high level of athletic function."

After her husband's job changed reducing his flexibility to be with their 12-year-old daughter during the day, Hurtado made the decision to leave Shepherd and start Brainwell, allowing her to set her own schedule, choose her clients, do home visits and provide wellness and coaching.

While vestibular rehab is a field that most people are unaware of, Hurtado is passionate about advancing the specialized therapy because she knows that many people suffer from vestibular disorders and feel helpless in managing them. Compared to traditional physical therapy, the field is relatively new thanks to advances in space science and its focus on how body senses gravity, Hurtado said. She hopes to be one of many clinicians who bring it to the mainstream.

"Not to oversimplify it, but the vestibular system is just a sensory system," Hurtado said. "And just as a physical therapist helps people with understanding where their bodies are in space with postural correction, it's similar for vestibular. It's task analysis. It's working through feedback. It's working through knowledge of performance. It's such a primitive system and it's one that so many of us take for granted. But when it malfunctions, it really throws people for a loop."

As someone who has suffered with migraines her whole life, Hurtado can empathize with many of her patients as she has learned to manage her own symptoms.

"I can definitely relate to most of the vestibular symptoms that I have learned about," she said. "I'll have moments with my patients where they're describing these really vague, abstract symptoms and I'm like, 'Yep, I know exactly what that feels like.'"

From working in a large health system to building a small business in a niche area of physical therapy that many are still discovering, Hurtado credits Emory for instilling confidence in her from the very beginning.

"From the moment I interviewed at Emory, it was instilled in me that success was an inevitability," she said. "It was like, 'We're going to make sure that you succeed because you have a name to uphold.' To that extent, it made me feel like I couldn't fail. I had a great faculty. I had great support. I had great mentorship from every network and from students who were a year or two ahead of me. I had everything I needed to succeed." **EPT**

Marie Johanson *Retires with a Legacy* of Teaching Excellence, Wise Leadership

Johanson, who joined the Emory Division of Physical Therapy in 1998, will be remembered for her abilty to connect with both students and colleagues.

With a physical therapy career that has spanned 43 years, Marie Johanson, PT, PhD, FAPTA, is so thankful to have been in a profession that allowed her to experience everything. After graduating from Emory's physical therapy certification program in 1982, Johanson started her career as a clinician in the acute care field and a couple of years later, moved to outpatient orthopedics where she became board certified by the American Physical Therapy Association (APTA) and worked in private practice for more than 15 years while serving as a clinical instructor and guest lecturer in academia.

In 1998, she was offered a faculty position at the Emory Division of Physical Therapy where, among other things, she taught in the classroom, conducted foot and ankle mechanics research, developed curriculum and then served as the interim director of the division for three-and-a-half years.

To borrow a sports term, she left nothing on the field and on Aug. 29, Johanson retired from the division with no regrets and a lifetime of fond memories. That once seemed impossible for a young girl who grew up as what Johanson described as "pathologically shy" with no clue of what field she wanted to pursue while in college as an undergrad.

After taking a few classes and learning that she wasn't cut out for journalism or music, an acquaintance advised Johanson to investigate physical therapy. Intrigued by health care because it wasn't a desk job and interested in PT because she hated needles and the field was "non-surgical and not drug related," Johanson took a job as a hospital PT tech for 18 months and loved it. As her career started, the shyness evaporated.

"When I started out in patient care where you're working one-on-one, I got comfortable with talking with individual people," Johanson said. "And then, when I went into academia, now I'm talking with groups of people. And then I go into conferences and presenting and even though I still always got really nervous, I would get up and talk in front of about 500 people. If you had told the 20-year-old me that I would do that, I would have said, 'No way. I'm not going to talk to two people.'"

Her younger self might have also been surprised by her impressive leadership abilities. In 2018, after former division Director Zoher Kapasi accepted a new position at the Medical University of South Carolina, Johanson, who was the division's associate director, became the interim director before George Fulk was hired for the position in 2022.

She led the division through perhaps the most challenging era of its nearly 50-year history — the COVID pandemic. Recent retiree and former long-time division faculty member Bruce Greenfield, PT, MA, PhD, FNAP, FAPTA, who also worked alongside Johanson in a private practice in the 1980s and refers to Johanson as his "work soulmate," remembers the calmness and empathy that she displayed during such an uncertain time.

"She recognized that things would have to be different for a while and I think her openness to different ways of teaching and functioning as faculty members during that time provided a safe space for us to be creative in the ways that we were teaching online," Greenfield said.

Division Professor Sarah Blanton, PT, DPT, who has known Johanson since 2000 and describes her as "wise, patient, humble and discerning," marveled at Johanson's ability to lead under such intense pressure during the pandemic.

"She made us feel safe at a time when so much didn't feel safe," Blanton said. "I don't know how she navigated all that she did, but she never complained and it was never about her and instead, was always about what she could do for us."

Johanson is careful to deflect credit to others — in fact, she credits the faculty for a 100 percent on-time student graduation rate during COVID. But she is proud of the fact that she was able to create an endowed student scholarship account at the division and an education scholarship which has bolstered the number of educational publications that have been produced inside the division further enhancing its national reputation.

While Johanson leaves the division excited to "learn new things outside of PT," including taking guitar and Spanish lessons and a future trip to Australia and New Zealand, she cherishes her relationships with the Emory faculty, staff and students along with the opportunity to improve the profession.

"What really warms my heart about my experience on the academic side of things is that, by now, I've had so many of my friends with musculoskeletal problems see a physical therapist and they come to me and say, 'Wow, I found out that you taught my therapist.'" Johanson said. "And what they said about me and how professional and knowledgeable my former students were makes my heart sing. This is the most wonderful feeling in the world because when you train a student and they do well, you've helped a lot of patients. While I know others have also contributed, you feel like you've made a difference." **EPT**

After Several Years As a Clinician, *Keenan Batts* Embraces First Full-Time *Teaching Role*

After earning her Doctor of Physical Therapy degree from Duke University in 2015, Keenan Batts, PT, DPT, NCS, did her residency at the Emory Division of Physical Therapy and served as a neurological physical therapist at the Emory Brain Health Center before accepting a physical therapist research assistant position in July 2023 at the Center for Physical Therapy and Movement Science. But for her, her career objective was always to serve in academia.

In March of this year, that goal was accomplished as Batts, who is board-certified in neurology by the ABPTS, joined the Emory Division of Physical Therapy as an assistant professor covering content related to adult neurological rehabilitation while serving as the director of the division's neurological residency program. Beginning her career at Emory in both clinical and research capacities paved the way for her first full-time teaching assignment, she said.

"I've always thought that a lot of physical therapy is teaching," Batts said. "So, being able to teach students and then residents in the clinic and now moving towards full-time teaching has been something that's really exciting for me — especially getting new students interested in neurology and giving them the resources to feel confident working with patients with neurological conditions."

Three years ago, Batts was named the recipient of the division's annual Clinical Educator Award for her investment in Emory DPT students serving 10-week clinical rotations at the Emory Brain Health Center. Her experience working in the clinic with Emory DPT students and doing occasional guest lectures at the division has made the transition to faculty nearly seamless.

"I really appreciate the collaborative nature of the faculty and their commitment to supporting students and being so intentional about making the experience of being an Emory DPT student the best it can be," Batts said. "I'm excited to be part of the teaching team and appreciate how welcomed everyone has made me feel. It's a great feeling especially when you're coming in from a different background and perspective."

Last August, Batts became a mother for the first time and cherishes the opportunity to see the world through the eyes of her toddler son.

"I love seeing his excitement when he learns how to do new things and having the opportunity to apply some of my PT knowledge to what he's working on," she said.

Outside of the classroom, Batts is an avid reader and tennis player and loves outdoor activities such as walking and hiking. **EPT**

FAVORITE MOVIE
Field of Dreams

FAVORITE ACTIVITIES
reading, tennis, walking and hiking

Leona Hidalgo *Seeks to Build Relationships*, Enhance Students' Clinical Experiences

FAVORITE MOVIE
The Matrix

FAVORITE ACTIVITIES
traveling, walking, spending time with family

Growing up in the Bahamas, Leona Hidalgo, PT, DPT, EdD, assistant professor and co-director of clinical education in the Emory Division of Physical Therapy, had never heard of physical therapy.

After moving to Florida to pursue her undergraduate degree, her mother was involved in a car accident that required physical therapy.

"I would take her to her appointments and was like, 'Who is this wonderful professional that's helping you?'" she recalls. "And that's how I was introduced to physical therapy. If that never happened, I don't know if I would have become a PT."

That experience not only established Hidalgo's career path, but through her physical therapy teaching career that has spanned 17 years, benefitted hundreds of PT students whom she has taught. Last August, she joined the division as its co-director of clinical education with the goal of ensuring that Emory DPT students have optimal experiences during their required clinical rotations.

While the COVID pandemic restricted the division's ability to personally connect with its clinical partners, Hidalgo is frequently on the road meeting people in person and building relationships that are ultimately geared to enhance the student clinical experience.

"I've spent my first year strengthening those partnerships to ensure that our students have the optimal support they need to succeed," Hidalgo explained. "Clinical education is such a unique entity that if you don't love it and you're not entrenched, you're not going to benefit from it in the way that you should."

After teaching for several years at Kaiser University and then the University of St. Augustine for Health Sciences, Hidalgo, with both of her daughters graduated from high school and enrolled in college, moved to Georgia to be near family. Her plan was to work in a clinic or find a teaching position — whichever opportunity came first. In the same week, she received offers to run a physical therapy clinic and join the Emory DPT faculty. For her, the decision was easy.

"For as long as I've been in academia, getting to see the students make that transition from the classroom to the clinic and see the light bulbs turn on, those moments are so important to me," Hidalgo said.

After researching the Emory Division of Physical Therapy, Hidalgo was drawn to the division's desire not just to make physical therapy accessible to communities in the U.S., but to those underserved areas worldwide.

"I've never seen so many service activities," she said. "I think the commitment to give back to communities is unmatched. I'm so inspired by what I've seen from all the faculty members. The trips that they're doing out of the country to help the underserved — I am in awe."

With more than a year at Emory, Hildalgo is also grateful for the support she's received from her faculty and staff colleagues.

"Everyone has been so supportive and there's not that pressure that you have to be someone who you're not," she said. "Everyone's their own person and everybody's bringing something different and valuable to the table."

In her time away from the profession, Hidalgo loves exploring Georgia's parks, taking photos and exploring the U.S. with her daughters, both of whom are biology majors interested in pursuing careers in health care.

"I travel and explore as much as I can," she said. "Otherwise, I'm a quiet person. I go through parks, I walk my dogs and I spend time with my family." **EPT**

Aparajita Maitra Committed to Ensure That *All PT Students Belong*

When it comes to inclusion, Emory Division of Physical Therapy Assistant Professor, Associate Director, JEDI Aparajita Maitra, PhD, is well aware that the national political environment has changed dramatically this year. What hasn't changed, Maitra insists, is the division's commitment to fostering a sense of belonging for all students, faculty and staff and ensuring that physical therapy is available to every patient population.

Maitra, who leads Emory DPT's inclusion efforts, joined the division's administrative staff in 2017 and served as associate director, programs & DEI for six-and-a-half years before being appointed to the faculty in March of this year.

As the division makes preparations to overhaul its curriculum within the next two years, Maitra has a seat at the table to ensure that the School of Medicine's mission and values are represented in the new curriculum.

"We are working to integrate modules which address health equity and self-awareness through the curriculum along with understanding health disparities," she said. "Our mission is to ensure that Emory DPT graduates are ready to provide care to a diverse population in the community and ensure that it is also culturally conscious care."

Maitra, who grew up in India, came to the U.S. to complete her graduate studies in regional planning and geographic information systems (GIS) at Indiana University of Pennsylvania (IUP). After landing her first GIS position in Ithaca, NY, she was elected to the county's affirmative action committee. This role provided the needed spark to pursue a career in advancing equity in the workplace.

"I think my passion comes from my lived experiences in India and the challenges that I faced there as a woman," Maitra explained. "My positionality in this work is a combination of my experiences, my education in social justice, my research exploring gender and leadership and my resolve to dismantling dominant pedagogies that marginalize diverse voices to foster inclusivity in academic spaces."

In 2001, she accepted an offer from Cornell University to be part of the Office for Workforce Diversity, Equity and Life Quality, which jump-started her career in academia. Since then, Maitra and her husband, currently a professor at Georgia State University, had career stops at schools in Ohio where she earned a PhD in Higher Education Administration from Bowling Green State University; Chicago where she was director of student and academic affairs at Rush University Medical Center and later, assistant dean at Roosevelt University; and Miami where she was assistant dean at Florida International University.

The Maitras moved to Atlanta at the end of 2015 and she joined Emory's Division of Physical Therapy in 2017. She was named the division's associate director in 2018, a position that supported the director and assisted the division in areas such as assessments and accreditation, strategic planning and marketing and communications.

While Maitra's road to Emory has included several stops in other parts of the country, she is grateful that every experience has taught her something valuable in administration, leadership and student affairs, along with cultivating so many meaningful relationships.

"I also really enjoy building relationships with people," she said. "That really motivates me because I believe that, at the end of the day, no matter how hard you work or what you achieve, what you take with you are the relationships that you have built." **EPT**

FAVORITE MOVIE
The Godfather

FAVORITE ACTIVITIES
exercise, listening to music, foodie

After Years of Clinical Practice, Vyoma Parikh *Begins Career in Neuroscience* Research

FAVORITE MOVIE
All Harry Potter movies

FAVORITE ACTIVITIES
traveling, scuba diving, drawing and painting

After 13 years of practice as a physical therapist in Texas and earning her PhD in physical therapy in 2023, Vyoma Parikh wanted to obtain postdoctoral research training and was impressed by the Emory Division of Physical Therapy's impressive national reputation in research and mentorship. She reached out to researcher Trisha Kesar, PT, PhD, a well-known associate professor at the division.

"I had read Dr. Kesar's work, met her at conferences and she was definitely someone who I've looked up to for many years," Parikh said. "My research included non-invasive brain stimulation techniques which is something Trisha also works on."

Parikh, who specializes in neurology and has earned certification in treating brain injuries, visited Emory and met with division Director George Fulk, PT, PhD, FAPTA, who informed her that there was an open instructor position on the faculty that she should pursue. In December 2023, Parikh and her family moved from Dallas to Atlanta to start her new position as instructor and postdoctoral research fellow.

"It was such a great opportunity because I was getting to learn, not only from the exceptional researchers at Emory, but also work alongside such established faculty members," said Parikh.

Parikh's long journey to Emory started as a teenager growing up in India when her grandfather had facial paralysis as a result of Bell's palsy. With little prior knowledge of the field, she saw first-hand the effectiveness of physical therapy in his recovery.

"I always knew I wanted to do something in the medical field and that personal experience drove me to PT after seeing the impact it could have on the quality of life and daily functioning of an individual," she said.

Parikh earned an undergraduate degree in PT in India and moved to the U.S. to get her master's degree in physical therapy with focus on neurology at the Massachusetts General Hospital Institute of Health Professions (MGH IHP) in Boston. She graduated in 2011 and moved to Texas for clinical practice while, at the same time, getting her DPT from MGH IHP in 2014.

Today, while her focus at Emory is primarily in research — although she does help teach the division's neuroscience and geriatric course — she is grateful for the way her new work family has embraced her.

"I've received so much mentoring since I've been here and I really appreciate the great team spirit and cohesiveness on the faculty and staff," Parikh said. "Everyone here is extremely accomplished but they don't make me feel like I'm an outsider. They have welcomed me with open arms and the first couple of years have been great for me. I look forward to many more."

Parikh and her husband have two children, a nine-year-old daughter and a five-year-old son, and love to travel throughout the U.S. Together, they have visited 33 states. When not traveling, Parikh loves to read and watch movies. She also enjoys scuba diving, represented her college in badminton, and loves to draw and paint. When it is time to unwind, she is often reading a book or watching a movie. **EPT**

Class of 2025 *Student Awards*

Each year the Division of Physical Therapy presents awards to graduating students

Director's Award for Academic Excellence | This award was given to **Priyanka Bhakta**, **Rebecca Fingerhood** and **Erin Fitzpatrick** in recognition of exceptional academic work.

Director's Award for Excellence in Growth Mindset | This award acknowledged **Ashanté Booker (not pictured)**, **Aushuwa Johnson** and **Darton Nguyen** for modeling perseverance and courage in meeting challenges and who, through hard work and dedication, demonstrate resilience and a love of learning.

Distinction in JEDI (Justice, Equity, Diversity and Inclusion) Award | This award was presented to **Priyanka Bhakta**, **Tieara Duckworth**, **Paige Enfinger**, **Katherine Hendry**, **Aushuwa Johnson**, **Matia Johnson**, **Maya Karri** and **Tia Roberts**.

Excellence in Service Award | This award recognized **William Dobbs** and **Shelby Sellers** for outstanding service contributions to the program and/or physical therapy's professional association.

Frances A. Curtiss Award for Excellence in Community Service | This award recognized the outstanding service contributions of **Paige Enfinger** and **Matia Johnson** to the community at the local, national or international level.

Frank S. Blanton Humanities in Rehabilitation Scholar Award | This award was presented to **Priyanka Bhakta** for being dedicated to the pursuit of knowledge in the humanities, demonstrating a deep desire to foster awareness of humanities in health professions, and exhibiting kindness and compassion in relating with others.

Ian H. Tovin Scholarship Award | This award was given to **Katherine Hendry** in recognition of outstanding performance throughout the program and an intention to focus on orthopedics after graduation.

Johnnie Morgan Award for Excellence in Clinical Science | This award was given to **Matia Johnson** and **Ethan Thompson** and for going above and beyond what is expected of students during their clinical affiliations.

Journal of Humanities in Rehabilitation Equity, Diversity, Inclusion and Humanism Scholar Award | This award was given to **Priyanka Bhakta**.

Pamela A. Catlin Award for Excellence in Critical Inquiry | This award was given to **Priyanka Bhakta**, **Katherine Hendry** and **Brian Wright** who were deemed by the faculty and their research advisers to have shown leadership, mastery of content knowledge, problem-solving ability, enthusiasm, and value to overall research projects.

Susan J. Herdman Award for Excellence in Clinical Practice | This award was given to **Michael Buckmire** and **Paige Enfinger** for exemplifying the drive to advance the profession and who demonstrated knowledge and skills in a specialized area of patient care.

Zoher F. Kapasi Award for Excellence in Leadership | This award was given to **Tieara Duckworth** and **Diamond Mungroo** for showing considerable initiative and organizational skills related to class and program activities.


Priyanka Bhakta


Michael Buckmire


William Dobbs


Tieara Duckworth


Paige Enfinger


Rebecca Fingerhood


Erin Fitzpatrick


Katherine Hendry


Aushuwa Johnson


Matia Johnson


Diamond Mungroo


Darton Nguyen


Tia Roberts


Shelby Sellers


Ethan Thompson


Brian Wright

2025 CLINICAL PARTNER AWARD

Neighboring Emory University Hospital Takes Initiative in *Educating DPT Students*

Elizabeth Green

It makes sense that the world-renowned teaching hospital on the Emory University campus is also one of the most valued clinical partners for the Emory Division of Physical Therapy. The specialized care center, with more than 700 beds and a medical staff consisting of faculty at the Emory University School of Medicine, takes around 10 students each year from Emory DPT for short- and long-term clinical rotations and in 2026, will add another five division students to the mix including some physical therapy students interested in specialized areas such as advanced ICU and oncology.

For its long-standing commitment to providing its students an optimal clinical rotation experience, Emory University Hospital has been named the Emory Division of Physical Therapy 2025 Clinical Partner Award recipient.

Ellizabeth Green, PT, DPT, the physical therapy supervisor at Emory University Hospital for the past six years in charge of matching Emory DPT students with clinical instructors (CIs) at the hospital, says the quality and professionalism of the students make the partnership work seamlessly.

"I've worked with several other programs in my 15 years at the hospital and I've always appreciated the high level of professionalism that Emory DPT students show when they arrive here," Green said. "They come prepared, ready to learn and aren't afraid to take initiative. It's so cool to see students who arrive early to review the charts with their CIs. We've had a great experience with Emory students."

For Green, seeing a physical therapy student blossom in both competence and confidence over a 10-week period never gets old.

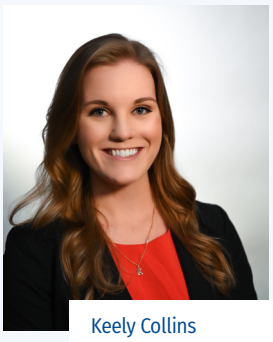
"Initially, when a student first starts the rotation, you can see the CI covering most of the workload and the student is a little timid," she explained. "But in just a few weeks, you see the confidence of the student going from being unsure about a patient to almost carrying the whole caseload for the CI. It truly is wonderful to watch."

Green, who earned her master's in physical therapy from Georgia State University in Atlanta and her DPT from the University of Montana, credits the Emory DPT faculty for working with the CIs individually and for preparing each student for the rotation.

"The Emory DPT faculty is so great to work with," Green said. "They are always accessible to us and they work hard to ensure that each student is ready to go on Day One." **EPT**

2025 CLINICAL EDUCATOR AWARD

Four Years After Graduating, Keely Collins *Still Making an Impact* at Emory DPT



Keely Collins

Keely Collins, PT, DPT, graduated from the Emory Division of Physical Therapy in 2021 and has never left the sprawling campus on Clifton Road. After graduation, she completed a one-year acute care residency with Emory and soon after, became a physical therapist at Emory University Hospital where she is a board certified cardiovascular and pulmonary clinical specialist.

While Collins occasionally guest lectures for some of Emory DPT's electives including Advanced Acute Care and Oncology, she also serves as a clinical instructor for current Emory DPT students doing their short- and long-term rotations. Her contributions to her alma mater have earned her the Emory Division of Physical Therapy's 2025 Clinical Educator Award.

For Collins, the opportunity to expose students to advanced acute care cases and broaden their interests outside of traditional outpatient orthopedics is gratifying. While many physical therapists enjoy pushing the bodies of athletes to the limits, Collins says you can do the same with critically ill patients in the hospital.

"There's two patient populations that you can really stress to the body's max — high-level athletes and critically ill patients," she explained. "At the hospital, we draw blood gases and it demonstrates that we're stressing their bodies to the max just by standing up or by walking 200 feet.

"It is nice when you can help shift the mindset on what PT in the hospital is and show them that it's not just coming in and giving post-op or discharge recommendations."

As an alum, Collins recalls how the Emory DPT curriculum strongly emphasized that students take time to self-reflect in clinical settings. As a clinical instructor, she believes that self-reflection is a distinguishing trait of an Emory DPT student.

"It's their willingness to accept knowledge, receive feedback and then self-reflect," she explained. "I love the fact that if I need to correct them, it's not viewed as negative feedback because they want to learn and they want that feedback. When I ask them to self-reflect, they initiate that feedback before I can even give it."

Collins also loves the fact that being a clinical instructor challenges her to keep learning,

"When I had my most recent student, I was actually studying for my cardio/pulmonary certification and specialty exam and it was very helpful because it was actually review for me," she said. "As I was educating the student and being a clinical instructor, it helped me continue to review and learn. I love having the students because it pushes me to keep learning." **EPT**

Congratulations Class of 2025