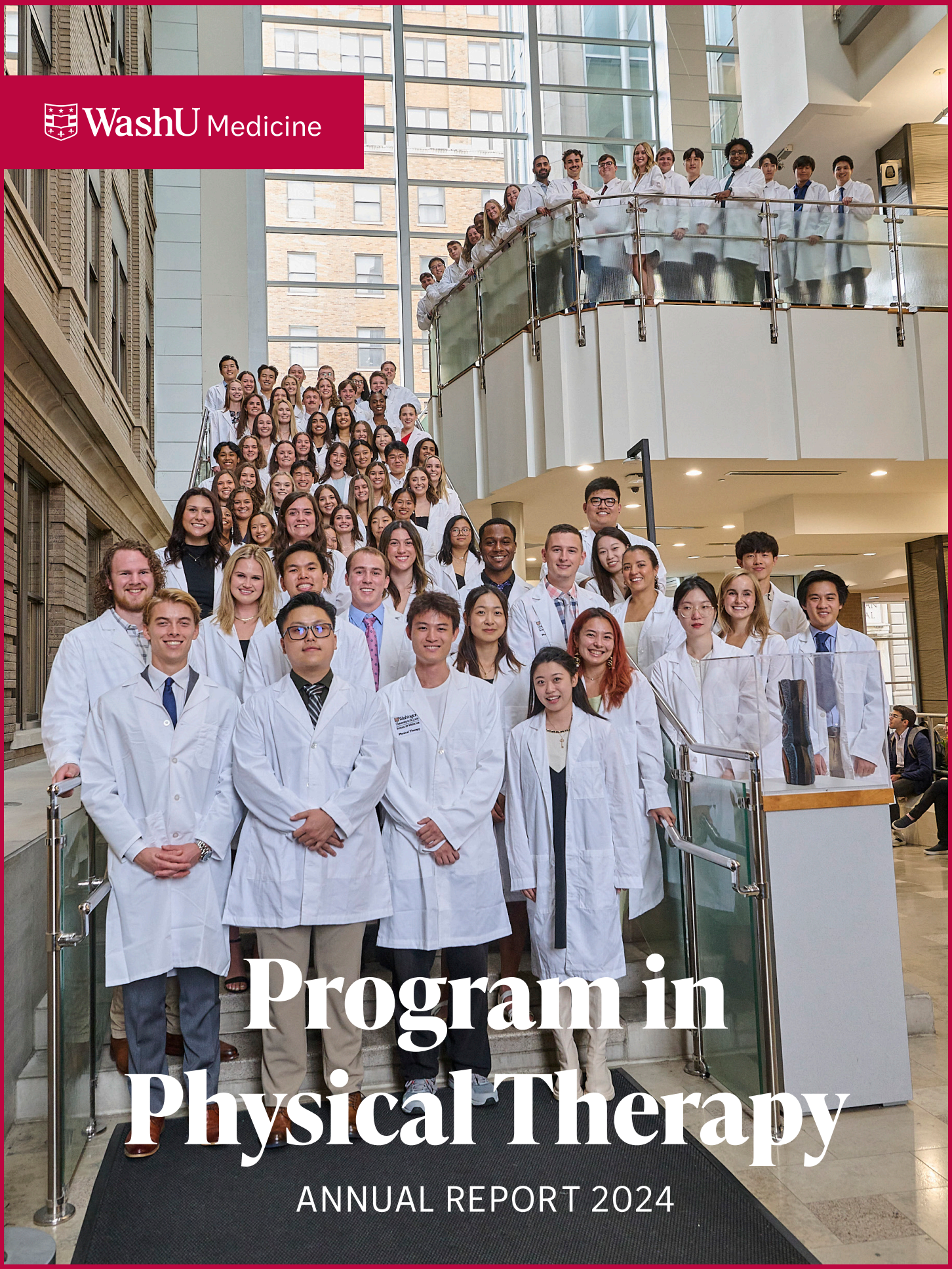
WashU Medicine



Program in Physical Therapy

ANNUAL REPORT 2024

Contents

Welcome

Maybe you've heard the saying, often attributed to Dr. Seuss, that "you have to be odd to be number one". I agree. WashU PT is number one, and we are odd. We are odd, or unusual, in the amount of care we show for one another, the way we celebrate our differences, the extent to which we collaborate and innovate, and the old and new traditions that we hold dear. This annual report is filled with examples of our oddities, and we couldn't be happier to share them with you. There is no place like WashU PT. We are proud to be odd, and grateful to be number one.

Gammon Earhart,
PT, PhD, FAPTA,
Associate Dean for Physical Therapy
Director, Program in Physical Therapy
Professor of Physical Therapy, Neuroscience, and Neurology

2024
by the Numbers

Program in Physical Therapy

Ranked #1 PT Program by U.S. News & World Report

90 incoming DPT students for the class of 2027

100% employment of WUPT23 graduates

32 active grants

9 clinical practice sites

60,000+ patient visits from January 1 – November 21, 2024

Education

First Cohort Graduates from Competency-Based DPT Curriculum

It was the culmination of years of planning, research and hard work. When the first cohort of learners who had traveled through the Washington University Program in Physical Therapy's innovative competency-based curriculum from start to finish graduated in May, a sense of excitement, pride and completion pervaded the event and has lingered since. But faculty, staff and learners aren't sitting back – they're using the momentum to continue propelling the program forward.

"We're proud of every group of graduates, but there is something special about the first cohort to come through a new curriculum," says Steven Ambler, PT, DPT, PhD, MPH, Professor of Physical Therapy and Orthopaedic Surgery and Division Director of Education. "It was hard to see them go, but we have more amazing learners coming into the program every year, and my hope is that all we learned together with this first cohort will help those who come after. Many of them are staying in touch with us, and we're happy to have them in the ranks of our alumni."

The 94 learners who earned their Doctorate in Physical Therapy in the spring of 2024 were integral to honing the competency-based curriculum, which faculty and staff had been developing since before the pandemic. The curriculum has a renewed focus on learning and developing adaptive expertise as learners prepare to enter unsupervised practice.

Feedback from the initial cohort of learners to complete the curriculum was critical to tweaking and ensuring it worked as expected. In doing that, Ambler says the learners were willing to commit to navigating uncertainty and to be leaders in ways that will serve them well in practice. “They had to be adaptable, and while that’s a popular term these days, these learners really stuck with that mindset even when they were tired and stressed,” he says. “We were all working on this concept of the ‘master adaptive learner,’ and they were developing habits and skills that will help them continue learning and adapting throughout their careers as clinicians, educators and researchers.”

One of the unique challenges faced by the 2024 cohort was working through the DPT program without the advice or reassurance of previous learners who had been through the same curriculum. Now, the new graduates will be able to advise and encourage the next class, Ambler notes. “That first group basically lowers the stress for everybody coming after them because they’re the ones who can help support the next class through it,” he says.

While this informal mentorship is helpful, as faculty continue to adjust the program based on feedback and observation, each class will experience slight differences. Ambler notes that with the overall structure in place, continuous improvement is an ongoing goal.

“What we’re really focused on right now is stabilizing as much as the healthcare environment will allow,” Ambler says. “We’re always going to engage in continuous improvement, but you can’t just stay in a cycle of radical change all the time.

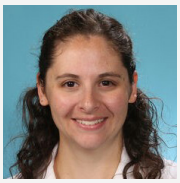
“Part of the continuous improvement cycle involves disseminating our work to the broader health professions community,” he adds. “We have started to publish this work and many faculty who have been innovators in education over the past few years are now disseminating that work to improve it and to share it with other programs. Part of this will be checking in on our new graduates and seeing all the amazing things they will do in practice!”

New Faculty

Alyssa Skala, PT, DPT, OCS, MSCS
Assistant Professor of Physical Therapy and Orthopaedic Surgery

Ammar Mahmood, PhD
Assistant Profess of Physical Therapy and Cell Biology & Physiology

Beth Hughes, PT, DPT, NCS
Assistant Professor of Physical Therapy and Neurology
Neuromuscular Lead

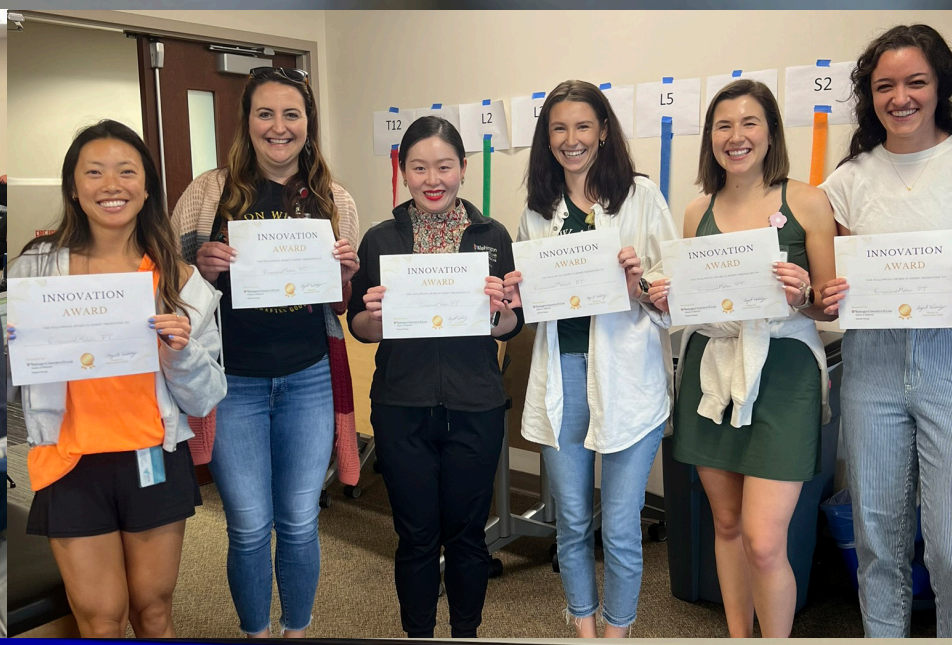


Dena Priluck, PT, DPT, NCS
Assistant Professor of Physical Therapy and Neurology

Jeff Konrad, PT, DPT, PhD
Assistant Professor of Physical Therapy and Neurology

Jess Randolph, EdD
Assistant Professor of Physical Therapy and Orthopaedic Surgery
Assistant Director of Learning and Continuous Improvement


Clinician
Scholar
Educator


INNOVATION
AWARD
T12
L2
L5
S2


Washington University in St. Louis
SCHOOL OF MEDICINE

Education Cont.

Combined Hats Meeting Showcases Final Projects

Learners in the WashU Program in Physical Therapy wear many hats. So, when they come together to share their final projects, it's exactly what the name says it is, a Combined Hats Meeting (CHM).

"When we were redesigning the final phase, we had an idea that learners could showcase their final project, be that a case study, a demonstration of clinical acumen, a literature review of scholarly articles, or whatever it was they elected to do," says Corey Woldenberg, PT, DPT, DHSc, Assistant Professor of Physical Therapy and Orthopaedic Surgery. "So, we created a conference-style event that occurred during the final week of the semester. The learners showcased everything they learned."

Woldenberg and colleagues modeled the Combined Hats Meeting on the American Physical Therapy Association's Combined Sections Meeting in which the APTA brings together clinicians and representatives of all the organization's specialties. Presentations covered an array of new clinical and research findings across the profession.

At the start of the final module of the DPT curriculum, Program in PT learners consider projects representing the various hats physical therapists wear: clinician, scholar and educator. "They choose which hat they really want to dive into and select one of two types of projects offered under that hat," Woldenberg says.

Working with faculty, learners develop the project throughout the module and present their final product at the Combined Hats Meeting.

Woldenberg and the planning team put on their creativity hats to come up with session formats including a Shark Tank-style event where learners who developed a business plan for a PT clinic pitched their concept to a panel posing as investors. An innovation hall featured tables where learners promoted their clinical concepts, and an electronic CHM catalog listed concurrent sessions in the same format as professional conferences.

Feedback from the inaugural Combined Hats Meeting was overwhelmingly positive, and plans are underway to make it an annual event. "This was by far my favorite week in all three years of the curriculum," one learner noted. "I was inspired by my classmates and all of the knowledge they gained and presented during the sessions. I made notes of the resources and general concepts of the topics, and I plan to use them as needed in my future."

"We hope to eventually engage local clinicians and potentially offer continuing education credit," Woldenberg says. "I was just very proud of our learners and the expertise they demonstrated. It's just very, very cool."

Research

NIH Awards Nurture Early Careers of Physical Therapy Researchers

Young researchers are the future of physical therapy, exploring topics that will inform the profession and improve patient care. Early career awards are crucial to funding young scholars' burgeoning research agendas, and the National Institutes of Health Research Career Development Awards are supporting several Washington University Program in Physical Therapy researchers.

Known as K awards, the NIH offers more than a dozen different awards "to provide individual and institutional research training opportunities to trainees at the undergraduate, graduate and postdoctoral levels." The awards granted to early-career researchers typically require mentorship from senior researchers and provide up to five years of funding for training opportunities, as well as research and salary support.

It was a K award that started Linda Van Dillen's research career, and she recognizes how crucial the funding is as junior faculty develop into independent investigators and nationally recognized subject matter experts. "Even though they have completed their doctorate and post-doctoral training, new tenure-track faculty need time to really establish themselves," says Van Dillen, PT, PhD, FAPTA, Professor of Physical Therapy and Orthopaedic Surgery and Division Director of Research. "These awards protect the investigator's time so they can focus on the research career they're developing."

Protecting that time means the investigators who receive K awards have funds to focus on their research programs and thus reduce the time spent teaching or participating in administration. In the early days, researchers need this time to create robust research programs and lab environments. "In the three to five years when they have this protection, they can launch their careers as independent investigators, asking new and innovative questions," Van Dillen says.

Laura McPherson is one of the researchers asking those questions. Her work focuses on identifying neural mechanisms underlying motor deficits in people with multiple sclerosis (MS), a neurodegenerative disease. She received a 2022 Mentored Career Development Program Award (KL2) through Washington University's NIH-funded Institute of Clinical and Translational Sciences (ICTS). "There are a wide variety of sensorimotor deficits that can occur with MS. The symptoms are different for every patient and are difficult to predict. It's challenging

to develop novel rehabilitation therapies for this population if we don't know how each patient's neural control of movement is disrupted," says McPherson, PT, DPT, PhD, assistant professor of physical therapy and neurology. "Ultimately, we want to be able to identify each patient's pathophysiology and apply a novel rehabilitation therapy that can drive beneficial neuroplasticity in a personalized way."

McPherson's mentorship team includes two neurologists and two Program in PT faculty. She has parlayed initial findings from her KL2 Award into two new independent research grants to continue her work, funded by the Department of Defense and the ICTS.

"The K award's mentorship, training opportunities, and funding have propelled my research forward much faster than without that help," she says. "It's a building block to the next grant in terms of research productivity and recognition as a scientist, so it makes me more competitive for future awards."

Jennifer Zellers, PT, DPT, PhD, Assistant Professor of Physical Therapy and Orthopaedic Surgery, is also building her research career. She received a Mentored Research Scientist Career Development Award (K01) to support her work on the interaction between tendon healing and the systemic environment. "I'm especially curious about how conditions like diabetes and metabolic syndrome influence a tendon's ability to heal," she says.

After initially working with human subjects, Zellers realized she needs to explore some preclinical models to better study her mechanistic questions. "My K award is all about getting experience with those preclinical models," she says. Zellers will use mouse models to determine how obesity affects tendon healing. It could be the body weight itself affecting the tendons or a pro-inflammatory environment that is the critical factor.

"We're excited about taking the results of this study back to our human subject work to see if the mechanisms we identify have similar effects in humans," Zellers says. "It's allowing us to take a really strong translational approach to our research questions."

Research continued on next page...

Jennifer Zellers, PT, DPT, PhD
Assistant Professor of Physical Therapy and Orthopaedic Surgery

Laura McPherson, PT, DPT, PhD
Assistant Professor of Physical Therapy and Neurology

Research Cont.

While McPherson and Zellers work with research mentors through their K awards, Rebekah Lawrence, PT, PhD, Assistant Professor of Physical Therapy and Orthopaedic Surgery, is transitioning to independent research. Her Pathway to Independence Award (K99/R00) is designed specifically to support a mentored phase that helps a young investigator transition into independence in their own research agenda. Lawrence completed the K99 (mentored) phase during her postdoctoral work at Henry Ford Health in Detroit from 2020 to 2022. She began the R00 (independent) phase when she accepted a faculty position in the WashU Program in Physical Therapy in August 2022.

“Although it is called an independent phase, I am developing collaborations with other researchers and clinicians here at WashU,” she says. Lawrence studies movement-based mechanisms related to rotator cuff pathology, hoping to better understand what factors contribute to rotator cuff tears and why symptoms and functional deficits vary so widely among individuals with the same type of injury. “In the first phase of the study, we worked to understand factors that may contribute to a rotator cuff tear. For example, we found that a tear can be predicted with good accuracy based on a combination of how the scapula is shaped and cumulative exposure to load during occupational activities,” she says. “This information may help us prevent tears from happening and minimize their impact on function.”

As she proceeds in her research career, Lawrence, like other physical therapy faculty and researchers, benefits from ongoing, informal mentorship in the form of collegial relationships and collaborations. “The main difference in this phase of the award is that I’m more in the driver’s seat now,” she adds. “But the support is still there if I want to run something by one of my colleagues.”

Van Dillen notes that forming these mature research relationships is one rite of passage in the journey to a tenured faculty position. She refers to NIH K awards as a validation that a researcher has promise and sees it as a natural stepping stone to future funding.

“My career wouldn’t be what it is today without a K award almost 25 years ago,” Van Dillen says. As she mentors junior faculty and helps recruit some of the nation’s brightest young scientists to the Program, she adds, “We’re bringing up the next generation of great researchers.”

Program Celebrates 10 Years of Sahrmann Lectures

The Washington University Program in Physical Therapy presented the 10th Annual Sahrmann Lectureship on Oct. 4, 2024. “We’re very proud of this lectureship, which allows our community and colleagues an opportunity to gain deeper knowledge and expand their understanding of current topics,” says Gammon Earhart, PT, PhD, FAPTA, Professor of Physical Therapy, Neurology, and Neuroscience; Associate Dean for Physical Therapy; and Director of the Program in Physical Therapy.

The 2024 Sahrmann Lectureship featured Phil McClure, PT, PhD, FAPTA, Professor and Chair of Physical Therapy at Arcadia University near Philadelphia, Pennsylvania. Shirley Sahrmann, PT, PhD, FAPTA, a renowned teacher, researcher and clinician who served as the first director of the Movement Science Program, annually chooses a speaker to present the lecture named in her honor and moderates a post-lecture Q&A.

McClure studies shoulder injury and recovery, focusing on shoulder dysfunction classifications and how treatments guided by those classifications affect outcomes. “The Sahrmann Lecture takes a clinical approach, whether the topic is laboratory research with a clinical application or data collected in a clinical setting,” Earhart says. She adds that Sahrmann rotates between speakers who focus on the upper body and those who discuss issues related to the lower body. “Over the 10 years, we’ve had lectures on the head and neck, shoulder, low back, hip and knee – it’s been a nice survey.”

The Sahrmann Lectureship began in 2014 when Sahrmann herself was the keynote speaker for the Program in PT’s movement system symposium. “After she spoke, we told her she had just given the first ever Sahrmann Lecture and that we were establishing it in her name as an annual event,” Earhart says. The lecture continues to be presented during a weekend of continuing education programming that attracts professionals from around the world who want to study the movement system approach developed by Sahrmann and colleagues.

To mark the lectureship’s 10th anniversary, Sarhmann received a custom-made book containing contributions from program alumni who were impacted by her work and guidance during her more than 50-year career. “I think she was genuinely surprised, and it’s kind of amazing we got all these people to send us submissions without her finding out about it,” Earhart laughs. A reception followed the presentation, allowing many individuals to personally thank Sahrmann for her contributions to their education and to the field in general.

Sahrmann Lecture presenters through the years:

2014 – Shirley A. Sahrmann, PT, PhD, FAPTA
2015 – Christopher Powers, PT, PhD, FACSM, FAPTA
2016 – Paula M. Ludewig, PT, PhD, FAPTA
2017 – Linda Van Dillen, PT, PhD, FAPTA
2018 – James M. Elliott, PT, PhD, FAPTA
2019 – Julie M. Fritz, PT, PhD, FAPTA
2020 – Rebekah L. Lawrence, PT, PhD, OCS
2021 – Richard B. Souza, PT, PhD
2022 – Gwendolyn Jull, AO, Mphty, PhD, FACP
2023 – RobRoy L. Martin, PhD, PT, CSCS
2024 – Philip McClure, PT, PhD, FAPTA

Community

Washington University Physical Therapy Steps Up for Greater St. Louis Marathon

When runners crossed the finish line of the Greater St. Louis Marathon on April 27, 2024, exhaustion gripped even the most seasoned participants. After 26.2 miles of pavement pounding, recovery was essential—and the Washington University Program in Physical Therapy rose to the challenge. Clinicians, faculty, staff, and learners provided massage, assisted stretching, and post-race recovery services to hundreds of grateful runners at finish-line tents and a dedicated commons area for WashU-affiliated participants.

Organizing recovery services for the marathon was no small feat, especially as this marked the Program's first year of involvement. "It was a tremendous team effort," said Gregory Holtzman, PT, DPT, SCS, Professor of Physical Therapy and Orthopaedic Surgery and Division Director of Clinical Practice. "Everyone came together incredibly well, and several people went above and beyond to make it happen."

Jennifer Brown, Senior Manager of Marketing Services, served as the primary liaison with marathon organizers, orchestrating the logistics to ensure the Program's polished and professional presence. Kristopher Gordon, PT, DPT, OCS, Assistant Professor of Physical Therapy and Orthopaedic Surgery, developed and distributed the educational content shared with runners. Kiara Olson, a 2024 DPT graduate and current Sports Physical Therapy Resident at Massachusetts General Hospital, rallied 20 fellow learners to volunteer. Meanwhile, Nygel Williams, Director of Program Business Operations, helped secure financial support for the initiative.

The effort proved especially critical when unforeseen circumstances required the team to step up even further. “We initially thought we’d be one of two groups of physical therapy providers,” Holtzman explained. “But a few weeks before race day, the other group withdrew due to staffing issues, so we really had to mobilize.”

With over 1,200 runners completing the full marathon and thousands more participating in the half-marathon, 10K, and 5K events, the demand for recovery services was high. More than 55 volunteers, including faculty, clinical associates, staff and learners, worked in two-hour shifts from the early morning start until the final runners crossed the finish line in the late afternoon.

“Our tents were buzzing,” Holtzman said. “We had 14 or 15 tables in constant use at the finish line and additional stations in the WashU commons area. In total, we assisted close to 500 runners with recovery services.” He emphasized that the Program was not involved in emergency care, which was handled by a separate medical tent, but focused solely on general recovery support.

Plans are already underway for the Program’s participation in the 2025 Greater St. Louis Marathon, set for April 26. “We’re fortunate to have the resources and expertise to make a significant impact,” Holtzman said. “It’s an opportunity to showcase the value of physical therapy while supporting the local running community.”

For runners eyeing next year’s marathon, Holtzman offered some advice: “Start training early. Injuries often happen when people push too hard, too fast. And always consult with your doctor before beginning any intensive training program.”

With its first successful marathon under its belt, the Washington University Program in Physical Therapy is poised to continue its vital role in promoting wellness and recovery for the St. Louis running community.

Julian Magee Presents National Woodruff Lecture

Julian Magee, PT, DPT, ATC, Associate Professor of Physical Therapy and Orthopaedic Surgery and Associate Director of Diversity, Equity and Inclusion, presented the fifth annual Lynda D. Woodruff Lecture on Diversity, Equity, and Inclusion in Physical Therapy on June 13, 2024. "Being chosen to present the Woodruff Lecture is a true honor, and one that Julian greatly deserves," says Gammon Earhart, PT, PhD, FAPTA, Professor of Physical Therapy, Neurology, and Neuroscience; Associate Dean for Physical Therapy; and Director of the Program in Physical Therapy.

She notes that last year Magee was a moderator for the panel discussion that follows the lecture. The lecture, presented to coincide with Juneteenth, is cosponsored by the Physical Therapy Learning Institute, American Academy of Physical Therapy, National Association of Black Physical Therapists, American Council of Academic Physical Therapy, the American Physical Therapy Association (APTA) Academy of Education and the APTA.

Magee reflected on the honor of delivering the lecture, saying, "Being asked to deliver the Woodruff Lecture was something that I had no idea would ever happen. I was extremely shocked and honored to be chosen as a lecturer. Given that Dr. Woodruff was a professor and mentor, I wanted to share something that I thought would honor her legacy. She was a fighter, and she never stopped trying to create positive change. I wanted to do something a bit different from the previous lectures and imagine a conversation with Dr. Woodruff about the current situation pertaining to issues related to diversity, equity, inclusion, and belonging. I felt the heaviness of the situation because I wanted to honor her for all that she has meant to the profession and to me personally."

"Julian's message this year was one of hope and encouragement," Earhart noted. "He reminded us that, despite setbacks in terms of DEI, we shouldn't give up." Magee's lecture was titled: "Where Do We Go From Here? Divine Dissatisfaction as the Catalyst for Revolution to Transform the Health of Society."

During the lecture, Magee said, "Transformation takes sacrifice, takes hard work, takes constant reassessment. Audacious goals do not allow for being stuck in satisfaction. We can settle for convenience or we can be transformational, but we cannot do both."

Woodruff was a visiting professor at Alabama State University, establishing the transitional DPT program in 2008. She also help create the APTA's original Advisory Council on Minority Affairs and the Office of Minority Affairs. She died in 2018.

While a student at ASU, Magee studied under Woodruff. "Julian is one of many students that Lynda Woodruff mentored and influenced in a very positive way," Earhart says. "Those students are known as 'Woody Babies,' and it was wonderful to hear Julian talk about his personal connection to Dr. Woodruff. It made the presentation even more impactful."

Clinical Practice

Seamless, Comprehensive Care for Patients in WashU's Embedded PT Clinics

Washington University Physical Therapy's (WashU PT) four primary practice locations are known for delivering top-tier care across a range of patient needs. However, many patients also benefit from WashU PT's unique embedded clinic model, where physical therapists (PTs) work as part of multidisciplinary teams at specialty clinics across the university. This integrated approach helps deliver comprehensive, same-day care for patients facing complex health challenges.

Currently, 10 WashU PTs spend a portion of their time embedded in these specialty clinics, collaborating directly with physicians and other healthcare providers. "Our embedded clinics began through collaborations with physicians and referral sources at WashU Medicine," says Gregory Holtzman, PT, DPT, SCS, Professor of Physical Therapy and Orthopaedic Surgery and Division Director of Clinical Practice. "These clinics make multidisciplinary care more accessible, often allowing patients to receive multiple services in one location and on the same day." This streamlined care model recognizes the value of physical therapy in enhancing patient outcomes through coordinated, efficient care. For example, WashU PTs are embedded in Washington University's Pain Management Center, Amyotrophic Lateral Sclerosis Center, Cerebral Palsy Center and Milliken Hand Center. Fostered collaboration between the Program in Occupational Therapy at the Milliken Hand Center enables the treatment of patients along side Washington University Plastic Surgeons.

The embedded clinics initiative started with the Pain Management Center in the Barnes-Jewish Center for Advanced Medicine. Anesthesiologists providing therapeutic injections saw the immediate benefit of having PTs onsite to help patients improve movement and reduce pain right after treatment. "These patients benefit directly from physical therapy to

Congratulations

Newly Certified Clinical Specialists

Meg Burgess, WCS
Women's Health Clinical Specialist

Kayley Stock, NCS
Neurologic Clinical Specialist

Amy DeFranco, NCS
Neurologic Clinical Specialist

address movement and pain science education after injections," Holtzman explains. "The embedded model allowed us to provide immediate follow-up, enhancing patient outcomes and experience."

Following the success of the Pain Management Center model, WashU PT extended the embedded clinic approach to the ALS Center, where a dedicated team led by neurologist Sean Smith, MD, MPHS, provides coordinated care for patients with amyotrophic lateral sclerosis (ALS). "Dr. Smith assembled a multidisciplinary team so patients with ALS could see all necessary specialists, including physical, occupational, and speech therapists, in one visit," Holtzman says. This coordinated care model is invaluable for patients with ALS, many of whom have difficulty accessing multiple resources. WashU PTs in this setting focus on posture, mobility, and exercises to maintain function, often involving caregivers in the process.

WashU PTs also serve at the Milliken Hand Rehabilitation Center, where they treat patients with complex hand, wrist, and elbow conditions. Working closely with specialized surgeons, PTs help restore function and improve outcomes for patients with complex upper extremity problems being managed both conservatively and via intricate surgical procedures.

The newest embedded PT clinic at the Cerebral Palsy Center addresses an important gap in adult care. Many individuals with cerebral palsy (CP) receive extensive support in childhood but find fewer resources as adults. This clinic provides much-needed, tailored care for adults with CP, who often face unique challenges due to changes in body size, weight, and function. "Our PTs meet patients where they are, adapting therapy for adults with CP," says Holtzman, noting the growing demand for these services.

Embedded clinics don't just streamline care—they create continuity. Many patients begin treatment in these specialized clinics and later continue at one of WashU's dedicated PT clinics, often with the same therapist, ensuring a seamless transition and consistency in care.

"We're constantly matching PTs with relevant expertise to these embedded clinics," Holtzman adds. "We're excited to see how this model will expand in the future to benefit even more patients."

WashU PT Staff in Embedded Clinics

Pain Management
Corey Woldenberg, PT, DPT, PhD
Brooke Sutter, PT, DPT
Jeanne Earley, PT

ALS Center
Beth Hughes, PT, DPT, NCS
Joan Scacciaferro, OT
Carrie Mosely, SLP

Cerebral Palsy Center
Dena Priluck, PT, DPT, NCS
Kate Mueth, PT, DPT

Washington University Plastic and Reconstructive Surgery in collaboration with Milliken Hand Clinic
Anita Uhlmann, PT, DPT
Lorna Kahn, PT, CHT

Speaker Series Features Diverse Voices and Perspectives

Julian Magee looked up to Valda Harris Montgomery since he was a student at Alabama State University. "She was my mentor as a student and then continued that role for me when I began teaching there," he says of Montgomery, a retired Associate Professor in the Clinical Doctorate of Physical Therapy Program at ASU. "It was wonderful to have her share her story here."

Magee, PT, DPT, ATC, Associate Professor of Physical Therapy and Orthopaedic Surgery and Associate Director of Diversity, Equity and Inclusion, introduced Montgomery to his WashU colleagues and program learners when she accepted an invitation to be part of the Physical Therapy Inclusion and Diversity (PTID) Speaker Series. "She's a child of the civil rights movement, the daughter of a Tuskegee Airman and a family friend of Dr. Martin Luther King Jr.," he says. "Dr. Montgomery has had a fascinating life and career, especially related to her perspectives around health equity, disparities and social justice."

The PTID speaker series, which occurs each spring, features physical therapists and educators with diverse backgrounds, broadening listeners' horizons and sparking discussion. Topics for 2024 ranged from race and ethnicity to LGBT and gender issues to challenges faced by people with disabilities.

In addition to Montgomery, the 2024 speaker series featured Lance Frank, PT, DPT, MPH, owner of Flex Physical Therapy in Atlanta. Frank's unique perspective stems from his work specializing in pelvic health and pelvic floor physical therapy, a niche that is less common among male physical therapists. A member of the LGBT community, Frank also raises awareness as a social media content creator.

"Dr. Frank talked about his journey and the adversity he faced in becoming accepted in his specialty area," Magee says. "But pelvic health is not just a female issue, and this is part of the tapestry of inclusion. How do we make the profession and the world more inclusive for people like a gay white man working to bring pelvic physical therapy to men who don't even know it's an option for them?"

Angela Fritz, PT, DPT, PCS, a pediatric physical therapist who advocates for people with disabilities, rounded out the 2024 series. Physical therapists are known for working with those with disabilities, but Fritz notes that many disabilities, like her hearing loss, are unseen. "We need to find ways to bring those individuals into practice," Magee says. "Our environments aren't necessarily built for them, so we need to think about things like closed captioning or adaptive equipment for people with other types of disabilities. After all, who understands someone who is differently abled better than a person who is living with their own challenges?"

Magee invites suggestions from program faculty, clinicians and learners on topics and speakers to pursue for future presentations. "This is an inclusive series that is open to all kinds of interests and ideas," he says. "Like it says in the title of the series, we're about inclusion and welcome many diverse experts and topics."


Washington University in St. Louis
School of Medicine
PRIDE

Class Notes & Program Honors

Steve Ambler, PT, DPT, PhD, MPH

- Selected to participate in the new WUSM Pivotal Leaders Program.

Rachel Belk, PTA

- Received the APTA Academy of Neurology Physical Therapy's Award for PTA Clinical Excellence in Neurology. This award honors a Physical Therapist Assistant who provides superior clinical care for individuals with neurologic disorders and demonstrates involvement in mentoring, clinical research, or program development.

Nancy Bloom, PT, DPT, MSOT

- Received the John H.P. Maley Lecture Award, given annually to an APTA physical therapist who has demonstrated clinical expertise and significant contributions to the profession. She will deliver the lecture in July 2025.

Christina Bourantas, Movement Science PhD Student

- Elected to the WashU Doctoral Council.

Jennifer Brown, Senior Manager, Marketing Services

- Selected to participate in the WashU Emerging Leaders Program.

Meg Burgess, PT, DPT, OCS, WCS

- Received the Rising Star Award from the Academy of Educators at the School of Medicine.

Heather Cabeza and Gabriella Deakin (PT24)

- Selected for the National Physical Therapy Student Honor Society. This honor society recognizes excellence, integrity, and professionalism in academic achievement, leadership, service, or research.

Stacey Chen, Movement Science PhD Student

- Awarded the Olin Chancellors Fellowship.
- Awarded a Promotion of Doctoral Studies (PODS) I scholarship through the Foundation for Physical Therapy Research. This is a competitive national scholarship supporting individuals in the coursework phase of post-professional doctoral studies.

Suzy Cornbleet, PT, DPT

- Received the Lifetime Achievement Award from the Academy of Educators at the WashU School of Medicine.
- Selected as PT25's Commencement speaker

Beth Crowner, PT, DPT, NCS, MPPA

- Inducted into the Academy of Educators.
- Completed the Master Interprofessional Educator certificate.
- Elected as the Academy of Neurologic Physical Therapy Director of Education.

Mary Crumley, PT, DPT, NCS, CBIS, MSCS

- Completed Foundations in Teaching Skills program through the Academy of Educators

Makenna Dixon (PT26)

- Earned a Rizing Tide Crest Scholarship. Selected from over 400 applicants, this scholarship recognizes academic performance, leadership, and personal character with future impact potential.

Marcie Harris-Hayes, PT, DPT, MSCI

- Served as an NIH study section chair.

Allison Haussler, Movement Science PhD Student

- Received an ASB Student Travel Award for her abstract titled "How Low Can You Go? Refining an Algorithm for Assessing Freezing of Gait in Parkinson Disease."

Greg Holtzman PT, DPT, SCS

- Received the Helen Holzum Whelan Award from APTA MO. This award honors members with 20+ years of service to the Eastern District and Missouri Chapter of APTA, recognizing significant and lasting contributions.

Yi Kang, DPT, Movement Science PhD Student

- Awarded the Olin Chancellors Fellowship.
- Won second place in the 3MT thesis competition for the 50th She Leads Symposium. Her talk was titled "TikTok: Could the Disruption of Circadian Rhythms Raise GI Cancer Risk?

Catherine Lang, PT, PhD, FASNR, FAPTA

- Received the Outstanding Faculty Award from the WashU Graduate Student Senate. This award honors faculty members for exceptional contributions to graduate students' quality of life, scholarly development, and professional growth.

Rebekah Lawrence, PT, PhD

- Received the Early Career Investigator Award in Biomechanics from the Academy of Physical Therapy Research.

Sherry Lohmann, Melanie Martin and Tyler Detmer, PT, DPT, WashU PT Staff

- 2024 WashU Wellness Champion grant.

Jacob McPherson, PhD

- Tapped to serve on the study section for Canada's Natural Sciences and Engineering Research Council, recognizing his expertise in the neurobiology of pain, neural plasticity, and spinal sensorimotor integration.

Dena Priluck, PT, DPT, NCS

- Completed the APTA Leadership Scholars program. This one-year program provides a curriculum covering association leadership and management topics, culminating in group projects and a graduation ceremony at APTA headquarters.

Jess Randolph, EdD

- Received a Drum Major Award from the WUSM Office of Diversity, Equity & Inclusion. This award recognizes individuals who embody the principles of justice, peace, and righteousness as described by Dr. Martin Luther King Jr.

Carolyn Ryterski, Manager of Finance and Administration

- Received the WUSM Operations Staff Award, recognizing exceptional performance, outstanding leadership, and superior quality of service.

Dale Thuet, PT, DPT, OCS

- Serving on the ABPTRFE DPT to Residency Pathway Task Force.
- Launched WashU Orthopaedic Residency.

Linda Van Dillen, PT, PhD, FAPTA

- Received the WashU School of Medicine Dean's Impact Award, recognizing faculty with enduring commitment to advancing others' careers through exceptional mentorship and sponsorship.

Madison Wissman, Movement Science PhD Student

- Awarded first place at the WashU Grad Research Symposium.
- Received a grant from the NIH through the Research Supplements to Promote Diversity in Health-Related Research Program. This 2.5-year award supports her PhD studies in the Movement Science Program.

Corey Woldenberg, PT, DPT, DHSc

- Elected to the WUSM Faculty Rights Committee.
- Appointed to the Education and Professional Development Committee of the US Association for the Study of Pain.

Faculty Promotions

Michael Harris, PhD

Associate Professor of Physical Therapy, Orthopaedic Surgery & Mechanical Engineering, with tenure

Sylvia Lin, PT, DPT, OCS

Professor of Physical Therapy & Orthopaedic Surgery

Julian Magee, PT, DPT, ATC

Associate Professor of Physical Therapy & Orthopaedic Surgery, and Associate Director of Diversity, Equity & Inclusion

Class Notes & Program Honors Cont.

Interprofessional Pro Bono Student Clinic Leaders

- **Shauna Montoya (PT24), Taylor Sheffield (PT24), Isha Tirupathi (PT24),** along with OT students, presented on March 16, 2024, at The Pro Bono Network Conference at Widener University in Chester, Pennsylvania. Their presentation title: "Our Start-up Story: The Progression of our In-Clinic Mentorship Model."

WashU PT Faculty, Staff and Residents

- Partnered with the Center for Community Health Partnership and Research to perform health screenings at the 4th Annual Health Equity Seminar hosted by the First Ladies of St. Louis on November 2. Several Program staff assisted with the organization of the event and performing the screenings: **Jenny Brown, Kaleigh Dickneite, Marcie Harris-Hayes, Kiaana Howard, Emily Kaszyk, Becky Lawrence, Jesse Moss, Lara Pfeiffer, Taylor Sheffield, Kayley Stock, Cameron Swick, Dale Thuet, and Lizzy Tolmich-Searle.**

Rachel Held, DPT Student

- Chaired the 10th Annual WUPT Day of Service where over 100 volunteers participated across 6 sites. She was assisted by site leads **Karie Abel, Genevieve Adler, Grace Bledsoe, Maya Costanzo, Genna Gittemeier, Cody Li, Lauren Marshall, Mo Moeslein, Amy Pender, Kimberly Reese, Alexis Schillinger, Emily Solem, Sam Sutorus, Crawford Tyler, and Jake Voight.**

Members of PT24

- **Johnathon Callum, Scout Hizer, and CJ Owens** presented at the APTA MO conference. Their presentation was titled, "Student Perspective on Diversity, Equity, and Inclusion in DPT/PTA Programs and Clinic"PTA Programs and Clinic"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Grants

Newly Awarded Grants: Funded in Fiscal Year 2023-2024

Marcie Harris-Hayes, PT, DPT, MSCI

TURNING THE TIDE: TRAINING DIVERSE CLINICIAN SCIENTISTS IN REHABILITATION RESEARCH

Funded by NIH R25 Subaward

TiDe (Training in Diversity education) is transforming biomedical science by reshaping research culture and fostering clinician scientists from underrepresented populations. Through strategic partnerships, the program provides faculty trainees, who must have a proven track record of federal research funding and a commitment to diversity mentoring, with the skills to mentor diverse clinician scientists effectively. TiDe faculty trainees extend their mentorship in rehabilitation research to student trainees in occupational and physical therapy graduate professional programs (MOT, MSOT, OTD, DPT). TiDe student trainees, from underrepresented groups, include individuals from selected racial or ethnic groups, those with disabilities, and those from disadvantaged backgrounds as defined by NIH.

Mary Hastings, PT, DPT, MSCI, ATC

LONG-TERM FUNCTIONAL AND CLINICAL OUTCOMES FOLLOWING THE MODIFIED KELLER WITH INTERPOSITION ARTHROPLASTY

Funded by American Orthopedic Foot and Ankle Society

In advanced hallux rigidus, patients are left with few viable motion sparing surgical treatment options. The current surgical "gold standard" is a first metatarsophalangeal joint fusion. This is a robust solution for pain relief once bony union is achieved; however, this procedure can result in nonunion, malunion, shortening of the first ray, and transfer metatarsalgia. The Modified Keller resection arthroplasty with interposition tissue (MOKCIA) is an alternative procedure that can allow for retention of motion at the metatarsophalangeal joint without the use of synthetic materials. Mid-term outcomes indicate significant improvements in pain relief and biomechanical function with maintenance of a modest amount of joint motion. There is limited long-term data on the results of this procedure. The purpose of this study is to determine the long-term efficacy of the MOKCIA procedure at alleviating pain, providing range of motion of the first metatarsophalangeal joint, and avoiding future surgical intervention compared to the gold standard of fusion.

Laura McPherson, PT, DPT, PhD

NEURAL MECHANISMS OF MOTOR HETEROGENEITY IN MULTIPLE SCLEROSIS

Funded by NIH KL2

Multiple sclerosis (MS) results in central nervous system lesions that alter neural communication between the brain and the spinal motoneurons that activate muscles to execute movement. In the intact nervous system, these voluntary motor commands consist of three components that must be appropriately balanced to produce skilled motor control: excitation, inhibition, and neuromodulation. Disruption of the balance of these components has deleterious effects on motor output. Unlike the spinal cord injury and hemiparetic stroke populations, in MS, we have no knowledge about how voluntary motor commands are disrupted, or how these disruptions relate to motor deficits. In part, this is because MS is so heterogeneous, making systematic research of neurophysiological correlates of motor dysfunction difficult. Together, these factors prevent the development of novel, targeted therapies. The goal of this study is to determine how voluntary motor commands are disrupted in a heterogeneous sample of patients with multiple sclerosis with all severities of motor deficits. We will determine whether subgroups of patients can be identified and determine whether components of voluntary motor commands predict clinical motor symptoms.

Michael Harris, PhD

LONGITUDINAL BIOMECHANICS AND PATIENT-REPORTED OUTCOMES AFTER PERIACETABULAR OSTEOTOMY FOR DEVELOPMENTAL DYSPLASIA OF THE HIP

Funded by NIAMS R01

Developmental dysplasia of the hip dramatically increases the risk for early hip osteoarthritis in young adults, and is usually treated surgically with a periacetabular osteotomy. The current project will rigorously investigate how periacetabular osteotomy changes hip biomechanics and how those changes are associated with patients' activity levels and self-reports of function, pain, and quality of life during the first year after surgery. Determining the longitudinal effects of surgery on biomechanics and how they relate to patients' own perceptions of their recovery will inform new strategies to increase the proportion of patients with DDH who experience better quality of life and delayed osteoarthritis.

Rebekah Lawrence, PT, PhD

INVESTIGATING THE MULTI-FACTORIAL ETIOLOGY OF ROTATOR CUFF PATHOLOGY IN HUMAN SUBJECTS

Funded by NIH R00

A rotator cuff tear is a common condition that affects approximately 40% of individuals over the age of 60. Despite their prevalence, the factors that lead to tendon tearing are not fully understood, nor are those that influence whether an individual with a tear experiences shoulder dysfunction or is able to maintain a high quality of life. In this grant, we are developing and validating a multivariable model to understand the biomechanical, anatomical, exposure, and personal factors that underly tendon pathology, symptom manifestation, and functional decline.

Jacob McPherson, PhD

TARGETED SPINAL CORD PLASTICITY FOR ALLEVIATING SCI-RELATED NEUROPATHIC PAIN

Funded by DoD Translational Research Award

Up to 70% of people living with spinal cord injury develop neuropathic pain (SCI-NP). Unfortunately, current management strategies for SCI-NP rarely afford satisfactory relief, and often cause bothersome side effects that can lead people to discontinue therapy. This translational project proposes a new approach to managing debilitating SCI-NP. By leveraging the remarkable intrinsic ability of the central nervous system to reorganize and repair, we propose to 'train' the spinal cord to reduce neural transmission in the overactive pain pathways that contribute to SCI-NP. The will project utilize a parallel animal-human design in which invasive electrophysiological studies in animals will evolve in parallel with a (non-invasive) pilot clinical trial in people living with SCI-NP. This study design enables real-time reciprocal flow of knowledge between bench and bedside, facilitating both mechanistic understanding and clinical translation.

Linda Van Dillen, PT, PhD, FAPTA

SIGNIFICANCE OF SPINAL MOVEMENT IMPAIRMENTS IN ACUTE LOW BACK PAIN

Funded by NIH R01

Non-specific low back pain is a highly prevalent and costly medical condition that is often characterized by recurrent, fluctuating or persistent pain and limitations in function over time. In this project we are working to understand the role of impairments in spine movement on the course of recovery of pain and functional limitations after a person experiences acute low back. We also will conduct a study treating the impairments during pain-provoking functional activities in people with acute low back pain seeking care in an emergency department setting.

Jennifer Zellers, PT, DPT, PhD

HUMAN DIABETIC TENDON COMPOSITION: A DATA-DRIVEN APPROACH

Funded by Musculoskeletal Research Center, Pilot & Feasibility Award (supported by NIH P30 AR074992)

Diabetes is known to increase the risk of tendon injury and impaired tendon healing. The current theoretical framework is that glycation of diabetic tendon is the mechanism behind tendon dysfunction. The central hypothesis is that the presence of diabetes results in a characteristic tendon fibrotic signature, which is also affected by aging and high body mass index. Further, transcription of tenogenic factors will be reduced in diabetic tendons with regional dependence.

Grants Cont.

Ryan Duncan, PT, DPT, MSCI

LOW BACK PAIN IN PARKINSON DISEASE
Funded by NIH K23

Gammon Earhart, PT, PhD, FAPTA

WALKING AND MHEALTH TO INCREASE PARTICIPATION IN PARKINSON DISEASE (WHIP-PD)
Funded by NIH RO1

SING FOR YOUR SAUNTER: USING SELF-GENERATED RHYTHMIC CUES TO ENHANCE GAIT IN PARKINSON'S
Funded by NIH R61

SPARX STUDY IN PARKINSON DISEASE OF EXERCISE PHASE 3 CLINICAL TRIAL: SPARX3
Funded by NIH U01 subaward

GRACEFUL GAIT: COMMUNITY-BASED BALLET TO IMPROVE GAIT AND BALANCE IN OLDER ADULTS
Funded by National Endowment for the Arts

Kerri Rawson, PhD, MS and Gammon Earhart, PT, PhD, FAPTA

MOVING MINDFULLY: A MBSR-CENTERED APPROACH TO FREEZING IN PARKINSON DISEASE
Funded by NIH R34

Michael Harris, PhD

MUSCLE GEOMETRY AND ITS INFLUENCE ON FUNCTION IN PATIENTS WITH DEVELOPMENTAL DYSPLASIA OF THE HIP
Funded by NIH K01

Catherine Lang, PT, PhD FASNR, FAPTA

TRANSLATION OF IN-CLINIC GAINS TO GAINS IN DAILY LIFE AFTER STROKE
Funded by NIH RO1

VARIATION IN EARLY MOTOR FUNCTION IN AUTISM, CEREBELLAR INJURY AND NORMAL TWINS
Funded by NIH RO1

Jacob McPherson, PhD

INTRASPINAL MICROSTIMULATION FOR MULTI-MODAL REHABILITATION
Funded by NIH RO1

RESTORATIVE NEUROPLASTICITY IN BRAINSTEM MOTOR PATHWAYS TO ENHANCE REHABILITATION
Funded by American Heart Association

Laura McPherson, PT, DPT, PhD

SUPERCOMPUTER-BASED MODELS OF MOTONEURONS FOR ESTIMTING THEIR SYNAPTIC INPUTS IN HUMANS
Funded by NIH R01

CRCNS: US-FRENCH RESEARCH PROPOSAL: IMPROVED SELECTIVITY FOR BIOELECTRONIC THERAPIES WITH INTRAFASCICULAR STIMULATION
Funded by NIH Subaward

Gretchen Meyer, PhD

PROMOTING MUSCLE REGENERATION THROUGH ADIPOSE SIGNALING
Funded by NIH R01

MEDIATED REGULATION OF SKELETAL MUSCLE FUNCTION AND METABOLISM
Funded by NIH RO1 (Sah)

TARGETED DELIVERY OF A PROANGIOGENIC AND PROMYOGENIC PROTEIN FOR REGENERATION OF DIABETIC ISCHEMIC LIMBS
Funded by RO1 (Guan)

Linda Van Dillen, PT, PhD, FAPTA

IMPACT OF HIP STRUCTURE AND FUNCTION ON THE CLINICAL PRESENTATION OF LOW BACK PAIN
Funded by the American Physical Therapy Association

Jennifer Zellers, PT, DPT, PhD

DIABETES-RELATED TENDON CHANGES: INTEGRATING EX VIVO AND IN VIVO APPROACHES
Funded by NIH F32


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Publications

January 1st - September 1st

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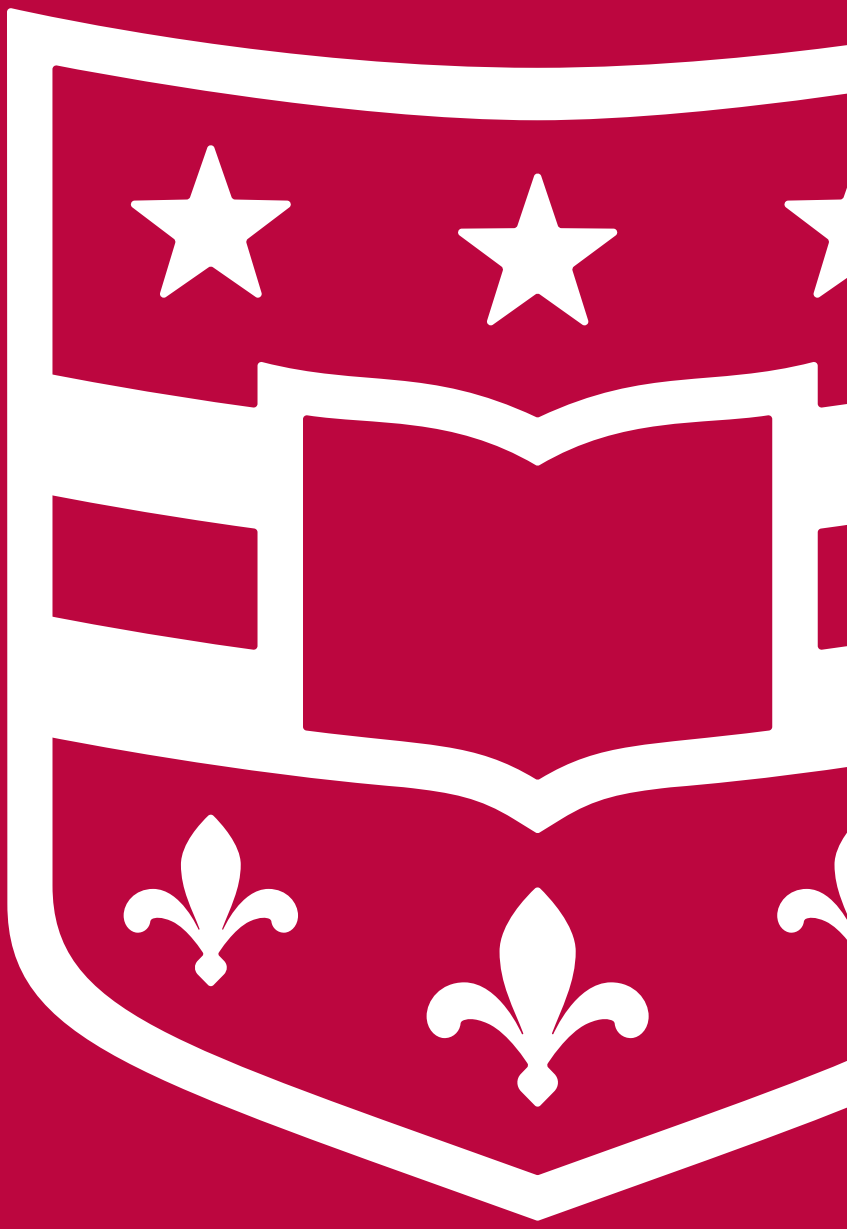

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