

Moving Ahead

Program in Physical Therapy

ANNUAL REPORT 2020



Washington University in St. Louis

SCHOOL OF MEDICINE

Program in Physical Therapy

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2020

by the
Numbers

**Ranked
#1**

PT Program by
U.S. News & World Report

94

incoming DPT students
for the class of 2023

100%

employment
of WUPT '19 graduates

33

active grants

4

clinical practice sites

44,674

number of patient visits
to date in 2020

Welcome



“Plasticity... means the possession of a structure weak enough to yield to an influence, but strong enough not to yield all at once.”

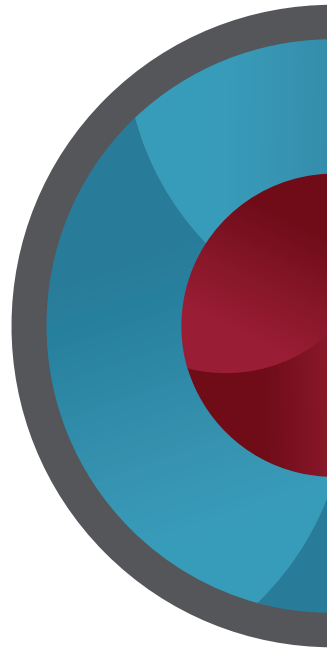
William James



**Gammon Earhart,
PT, PhD, FAPTA,**

Associate Dean for
Physical Therapy

Given my background and interests, I normally think of plasticity in the context of the nervous system. But my perspective on plasticity widened this year as I witnessed people continually adapt to face the challenges of the COVID-19 pandemic. The pandemic has touched all of us, shaping us in ways we never imagined would be possible or necessary. As we have adapted, the teamwork, compassion and dedication demonstrated by students, staff and faculty throughout this challenging year have been nothing short of remarkable. I am grateful to be part of such an amazing community and pleased to share with you this annual report highlighting the incredible pandemic plasticity demonstrated across education, clinical practice, research and service activities within the Program in Physical Therapy.





Associate Professor,
**Ryan Duncan, PT,
DPT, MSCI**, was one
of many members of the
WUPT community who
participated in the White
Coats for Black Lives event
on the medical center
campus this summer.

Inclusion & Diversity

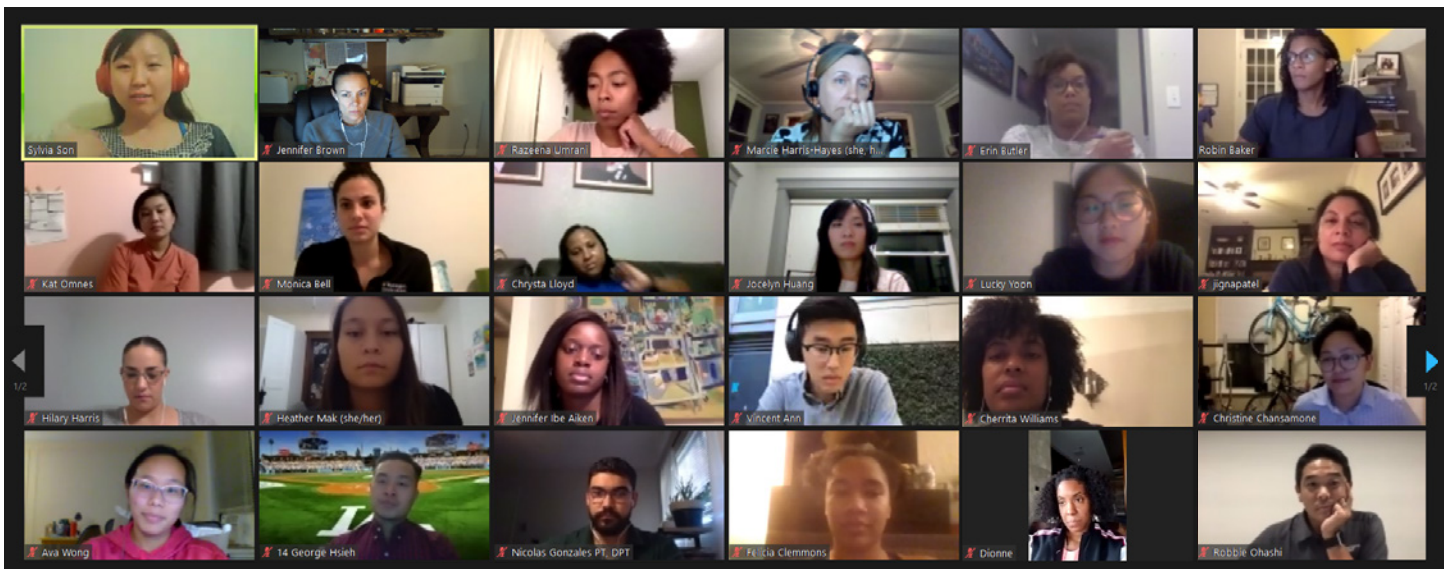
The Program in Physical Therapy is committed to building a diverse community of scholars. Faculty, students, and staff participate in activities and programs that seek to educate, identify, and recruit talented students to the Program and the profession.

The Program in Physical Therapy has been engaged in efforts to enhance inclusion and diversity for several years through our Physical Therapy Inclusion & Diversity (PT ID) group. This group was founded by two students in 2016 and has primarily engaged in community outreach activities over the past several years. However, this summer our focus turned inward as we held listening sessions facilitated by the Washington University School of Medicine Office of Diversity, Equity and Inclusion. BIPOC students and faculty shared their experiences and observations, and we crafted a plan for immediate and longer-term actions to foster diversity, equity and inclusion within our Program. Changes made over the second half of 2020 include:

- Implementation of a behavioral expectations document for all employees and students, making clear that ours is a collaborative environment where all members of our community are valued and respected
- Expansion of our Diversity 1.0-4.0 training series to include not just faculty and students but also lab assistants

- Establishment of an alumni mentoring network that connects current BIPOC students with BIPOC alumni
- Formation of a student group specifically founded by and for BIPOC students, providing a safe space for reflection and discussion
- Hosting of a 20-week Witnessing Whiteness workshop for WUPT employees
- Creation of a video tour of St. Louis to highlight how racism and segregation contribute to health inequities
- Organization of monthly journal clubs focused on review of literature about bias and its impact on healthcare and outcomes
- Coordination of regular, ongoing listening sessions for BIPOC students and faculty

We are committed to continued conversation and action surrounding these important issues.



BIPOC students and alumni participated in a speed mentoring session and a networking happy hour this fall.

Education

The mission of the Clinical Division is to provide high-quality, evidence-based care with compassion. As movement system experts, our clinicians strive to diagnose movement impairments and deliver individualized treatment to optimize function, health and wellness across the lifespan.

Dr. Steve Ambler recalls the second week of March 2020 as “emergency mode.” As Associate Director of Professional Curriculum in physical therapy, Ambler was focused on a complete curriculum renewal, a multi-year project set to launch in fall 2021. Suddenly, however, when Washington University suspended in-person classes due to the coronavirus pandemic, Ambler and his colleagues found themselves scrambling to move to virtual instruction in mere days. The pivot not only succeeded in the short-term, but helped actively position the program for the future.

While faculty and administrators across the university worked quickly to shift to online courses, the curriculum renewal process gave the Program in Physical Therapy a leg up. “We were at a relative advantage,” Ambler says. “As part of our renewal, we had already implemented Canvas, an online learning management system, and had moved a number of our courses and assessments into that system. Also, for years we had recorded everything in case students had to miss a class or wanted to review something.”

The program canceled classes on March 12 and 13, and by Monday, March 16, students rejoined their classes via their screens. “We built an online model that included asynchronous learning time to give students maximum flexibility along with synchronous class sessions,” Ambler says.

Dr. Carey Holleran, Assistant Professor, refers to the faculty as a “well-oiled machine.” She was impressed with the collaborative nature of the transition. “We came together to leverage pre-existing strengths while being creative in moving forward,” she says. “The focus was on what was best for the students.”

Yet physical therapy is, as the name implies, largely physical, which created unique challenges. Dr. Patty McGee, Assistant Professor, was in the midst of her spring semester class on professional issues and skills development for first-year students, a course that integrates clinical experience. For some students, the interruption meant a loss of valuable clinic exposure.



Professor of Physical Therapy, **Beth Crowner, PT, DPT, NCS, MPPA**, and her son Will Crowner, participate in a virtual lab. Students drove virtual treatment sessions with Will over Zoom.



Beth Crowner and DPT students observed and discussed video cases over Zoom in Diagnosis & Management of Neuromuscular Conditions I.

New Faculty

“We created a series of activities that utilized our existing resources,” McGee says. For example, second-year students presented clinical cases to first-year students, providing new and valuable mentoring experiences for the second-year students. First-year students then wrote reflections on the cases.

“There’s obviously no replacement for experience in an authentic clinical environment, but we simulated the clinical environment and in so doing, we really evolved the course,” she adds. “The feedback was very good, and students even asked that we continue many of the new learning activities we set up during the online period.”

Dr. Beth Crowner also teaches a course heavily dependent on clinical exposure and hands-on lab experiences. When asked how she approached the transition to virtual coursework she pauses, then replies, “It took creativity.”

Crowner worked with colleagues to create virtual patient labs where patients and therapists met via Zoom. “We had to carefully consider which individuals we would include and what activities we would ask them to perform,” she says. “And the students then had to drive the treatment session as they normally would. What was ultimately fun and fascinating was how it challenged all of us to deliver care virtually.”

Crowner’s students also observed and discussed video cases, and she now has a library of such recorded cases for future use. She credits the Program’s dedicated educational technology professionals and Canvas for making the quick turnaround possible and notes that students responded very positively to the needed changes.

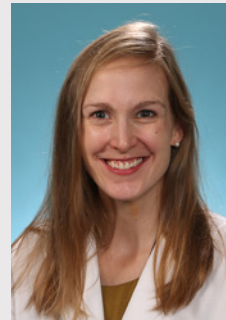
As the physical therapy clinics began to reopen with pandemic safety precautions in place, students returned to campus a week before the fall semester began for an intensive hands-on experience in small groups. Fall courses commenced with a mixture of virtual content and small clinical cohorts paired with lab instructors. Students prepared and learned materials in advance and then demonstrated and practiced in person, a key component of the curriculum renewal’s “competency-based” ethos.

“We already had faculty development planned for the summer to move to applying these principles, so we were able to move into fall 2020’s hybrid model while preparing for fall 2021’s curriculum renewal launch,” Ambler says. “We’re very lucky. Our students are adaptable. And our faculty already had the basic structures and principles in place. Everything we’ve done is just moving us forward.”

The students, faculty and staff that Ambler appreciates prove it takes more than a global pandemic to derail the program’s momentum toward a renewed curriculum. Despite the challenges of the coronavirus, the timeline remains intact, enthusiasm remains high, and a new competency-based curriculum remains just around the corner.

Megan Burgess, PT, DPT, OCS

*BEd and BS, University of Virginia, '06
DPT, Washington University in St. Louis, '10*



Megan Burgess, PT, DPT, OCS is an Assistant Professor of Physical Therapy & Orthopaedic Surgery. Her teaching focus is orthopedic musculoskeletal conditions, specifically the relationship between anatomy and movement system impairments, namely that

which relates to pelvic health. She is passionate in working with students to build foundational clinical skills as preparation for integration with movement-focused diagnosis and treatment.

Dr. Burgess’s clinical focus is pelvic health throughout the lifespan, including both men and women.

Cheryl R. Smith, PT, DPT, OCS

*BS, University of Oklahoma, Health and Sport Sciences, 1997
MPT, University of Oklahoma Health Science Center, 2004
Clinical Fellowship in Movement System Impairments, 2009
DPT, Washington University in St. Louis, 2010*

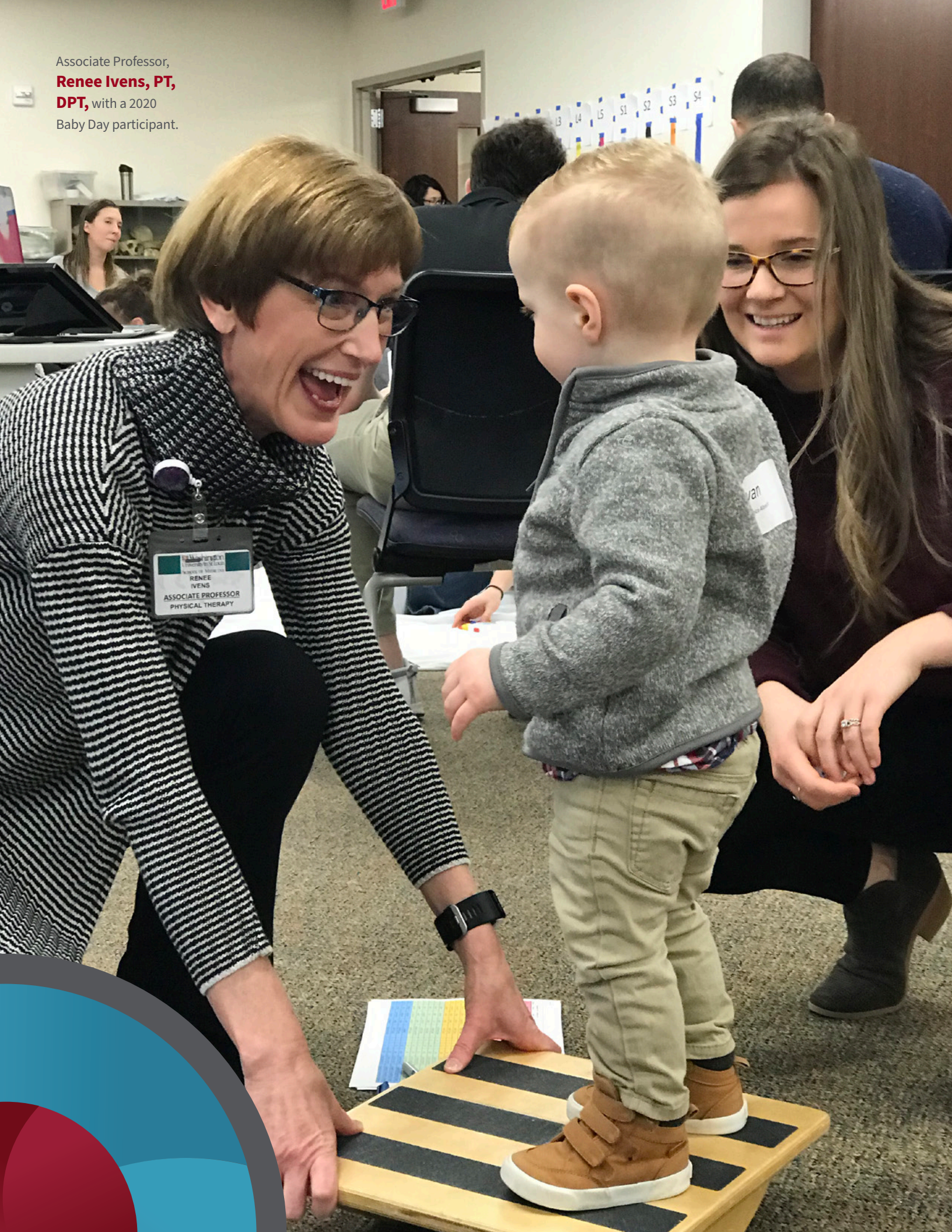


Cheryl R. Smith, PT, DPT, OCS is an Assistant Professor of Physical Therapy, Orthopaedic Surgery and a Board-Certified Specialist in Orthopedics. Her teaching focus is diagnosis and management of musculoskeletal disorders, anatomy and the

combination of the movement system with manual therapy. Cheryl has a passion for working with young adults with hip pain and non-arthritic hip conditions.

Dr. Smith’s area of clinical interest is complex musculoskeletal conditions including pre- and post-operative care specifically in the young adult hip.

Associate Professor,
Renee Ivens, PT,
DPT, with a 2020
Baby Day participant.



Research

The mission of the Research Division is to understand how the movement system is affected by disease, injury, lifestyle, development and aging, and how movement can be used to promote health by enhancing physical function, activity and participation across the lifespan.

Dr. Gammon Earhart, Associate Dean for Physical Therapy, was right on track with her research. Along with Associate Professor Ryan Duncan and Senior Scientist Kerri Rawson, their team was in the midst of a five-year, National Institutes of Health-funded project. Then the pandemic hit.

“We had to pivot very quickly,” Rawson says. In March, the team packed up their laptops and moved into home offices where they immediately began redesigning their research protocols in order to continue moving their work forward.

Earhart, Duncan and Rawson are working with Boston University colleagues, Terry Ellis and Tami DeAngelis, to study how cognitive behavioral therapy and an app-based “mobile health technology” affect the maintenance of walking in people with Parkinson’s disease. “We’re targeting real-world walking behavior, not only exercises performed in the clinic,” Rawson explains.

Walking ability tends to diminish early in people with PD, “and that’s a red flag that there’s going to be more of a decline,” she says. By keeping people ambulatory, the goal is to help delay further disability.

The coronavirus pandemic derailed the work of thousands of researchers across the country as universities shifted to remote functions, and scientists were unable to bring subjects into the lab. However, Earhart’s team continued their work, despite pandemic constraints.

The study follows a control group that receives conventional physical therapy, including prescribed exercises. “We see them for six PT sessions and then have them do exercises on their own for the remainder of a year,” Duncan says. “The experimental group also received six sessions that included cognitive behavioral therapy (CBT) to help enhance their self-confidence”.

Duncan, who was specially trained to provide the CBT intervention, helps subjects establish a walking routine and develop strategies to overcome potential challenges. Members of this group also access a mobile app that allows



Members of the Movement and Neurodegenerative Disease team. From left: **Gammon Earhart, PT, PhD, FAPTA**; PhD student **David May, PT, PhD**; **Ryan Duncan, PT, DPT, MSCI**; PhD student **Adam Horin**; **Kerri Rawson, PhD, MS**; clinical research coordinator **Martha Hessler**; and postdoctoral fellow **Ellie Harrison, PhD**.

them to log their exercise and contact Duncan at any time for support or advice.

Adjusting to the new reality of the pandemic required the team to alter some data collection efforts. Before the coronavirus upended life in March, study participants would spend two to three hours with researchers for an assessment at the beginning of their involvement and repeated this assessment again three, six and 12 months after their initial assessment. Each assessment involved lengthy questionnaires and physical motor testing.

Now, participants receive a binder and wearable sensor in the mail. They wear the monitor on their ankle for a week to track their walking activity and complete the questionnaires contained in their personalized study binder, which they return to the research team for analysis. “The components that are still missing are some balance testing and data from a six-minute walk test,” says Rawson, who focuses on the assessment component of the study.

In March, there were 70 total participants active in the study. As the team continues to collect data, they are now resuming recruitment of new participants to achieve their desired total of 150 participants. “We’ll be following institutional and departmental guidelines to ensure our participants are safe,” Earhart notes. COVID-19 screenings, universal masking and other protective gear, reducing touch points, and sanitizing thoroughly are among the measures now in place when participants receive their PT sessions.

“I’m grateful for and proud of our entire team’s flexibility and creativity in adjusting to an unexpected and challenging situation,” Earhart says. “What we did out of necessity really ended up helping us improve our overall efficiency, and our participants seem to appreciate the convenience. It’s been a mutually beneficial experience, and we’re hopeful we’ll see some very interesting results.”

Newly Awarded Grants

Funded in Fiscal Year 2019 – 2020

Ryan Duncan, PT, DPT, MSCI

LOW BACK PAIN IN PARKINSON DISEASE

Funded by NIH K23

Low back pain (LBP) is highly prevalent, but not well-understood, in people with Parkinson disease (PD). The overall goal of this investigation is to comprehensively characterize LBP in PD. We will determine whether and how factors known to contribute to LBP (e.g., biomechanical, sensory, and psychologic impairments) differ between people with PD and older adults.

Gammon Earhart, PT, PhD, FAPTA

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

Funded by NIH R61

This project seeks to harness the power of music and singing to enhance walking ability in people with Parkinson disease. We think that mental (i.e. imagined) singing while walking will help people walk faster with more stable gait while walking to music will help people walk faster but will less stability. Our studies will help us understand the best ways to use singing and music to help people walk more effectively and maintain their mobility and independence, and we will learn how use of these methods influences the brain.

SPARX STUDY IN PARKINSON DISEASE OF EXERCISE PHASE 3 CLINICAL TRIAL: SPARX3

Funded by NIH U01

This is a Phase III multi-site clinical trial to establish the efficacy of progressive high-intensity, endurance treadmill exercise to slow the progression of the signs of Parkinson's disease (PD). If successful, this study will have a significant impact on the quality of life of people with PD and their caregivers as well as public health since it will slow progression of the signs of PD. The PI of this grant is Daniel Corcos, PhD, at Northwestern University and Gammon Earhart is the site PI for Washington University.

Jacob McPherson, PhD

RESTORATIVE NEUROPLASTICITY IN BRAINSTEM MOTOR PATHWAYS TO ENHANCE REHABILITATION

Funded by American Heart Association

This proposal will develop a new paradigm for rehabilitating reaching deficits in the paretic arm of individuals with stroke. We propose to use principles of neural learning to reduce transmission in 'backup' motor pathways that become overactive post-stroke and are responsible for the inability to lift and reach. To link therapy-induced changes in the neural control of movement and functional use of the arm, we propose to adapt a transformative new bioengineering technology that will allow us to non-invasively access neural firing patterns from neurons in the spinal cord and to characterize what brain regions contributed to the descending motor commands. If the aims of the proposal are achieved, we will have revealed a previously undescribed type of neural learning in the spinal cord that will open the door to new scientific inquiry – including translation to lower-limb motor deficits post-stroke – and development of combinatorial therapies that maximize the therapeutic potential of this effect.

Laura McPherson, PT, DPT, PhD

CRCNS: IMPROVING BIOELECTRONIC SELECTIVITY WITH INTRAFASCICULAR STIMULATION

Funded by NIH-Florida International University Subaward

The major goals of this project are to develop and analyze new strategies for selective stimulation of nerve fibers within individual fascicles using computational models, to develop neurostimulation hardware capable of delivering the stimulation, and to assess the ability of the strategies to achieve selective stimulation in anesthetized rabbits.

Gretchen Meyer, PhD

PROMOTING MUSCLE REGENERATION THROUGH ADIPOSE SIGNALING

Funded by NIH R01

Accumulation of fat within and between muscles is a hallmark of chronic muscle pathology and is thought to contribute to persistent muscle weakness and functional limitations. These experiments aim to define the nature of the interaction between fat and satellite cells (the cellular source for muscle growth and regeneration) with a specific focus on the role of fat phenotype. Knowledge gathered from this work will inform the development of adjuvant therapies targeting fat to improve muscle function and quality of life for the more than 1 million Americans seeking rehabilitative care for chronic muscle pathology.

Diana Parra Perez, PhD

JUNTXS SE PUEDE: A RELATIONAL TEAMWORK APPROACH TOWARD ENHANCING WELLNESS

Funded by WUSM Institute for Public Health

This project will assess how an inter-organizational collaboration between the Refugio Hispanic Ministry of South City Church, LifeWise STL, and St. Louis Crisis Nursery relates to clients' wellness as compared to clients who are not directly served by all three organizations.

Susan Racette, PhD

PERSONALIZING EXERCISE FOR PARKINSON'S DISEASE

Funded by The Foundation for Barnes-Jewish

The major goal is to evaluate the benefits of Parkinson-specific exercise programs on physical function and disease-related quality of life among adults with Parkinson Disease (PD). The significance of this project is that millions of patients suffer the adverse consequences of PD, the prevalence of PD is high in the Midwest, and there is evidence from short-term, research-focused exercise interventions that PD

symptoms improve with exercise. We hypothesize that community-based, Parkinson-specific exercise programs that are tailored to address patient-specific physical limitations will have clinically significant benefits on physical function and quality of life among people with PD.

**PRIDE SUMMER INSTITUTE IN
CARDIOVASCULAR GENETIC EPIDEMIOLOGY**

Funded by NIH R25

The primary objective of the all-expense-paid Summer Institute in Cardiovascular Disease Comorbidities, Genetics and Epidemiology (CVD-CGE) is to provide training and mentoring to

junior-level faculty and scientists who are underrepresented in the biomedical sciences and/or who have a disability, so that they can competently and effectively develop independent research programs on cutting edge Heart, Lung, Blood, and Sleep (HLBS) disorders. This initiative to bring underrepresented faculty and scientists into research is important because of the major public health burden of these diseases and health disparities.

Jennifer Zellers, PT, DPT, PhD

**DIABETES-RELATED TENDON CHANGES:
INTEGRATING EX VIVO AND IN VIVO APPROACHES**

Funded by NIH F32

Diabetes has been linked to increased risk of tendon injury, and Achilles tendon dysfunction has been suggested to start a sequence of events that can lead to lower limb amputation. This project will use a new magnetic resonance imaging (MRI) tool to establish the ability of this tool to assess tendon structure and identify tendon structural changes in individuals with diabetes compared to without diabetes. The results of this study will inform the clinical use of this MRI tool as a biomarker of tendon structure and clarify diabetes-related tendon changes in humans.



Members of PT '20 with **Dr. Shirley Sahrman** at the Combined Sections Meeting Alumni Reception.



Vanessa Lanier, PT, DPT, OCS, Assistant Professor of Physical Therapy, works with PT '22 students during the lower quarter hands-on intensive lab.

Continuing Awards

Todd Cade, PT, PhD

Funded by Barth Syndrome Foundation

CHARACTERIZATION OF THE 'METABOLIC PHENOTYPE' IN BARTH SYNDROME WITH CARDIAC TRANSPLANTATION

Funded by NIH National

REACT ACUTE EFFECTS OF AEROBIC AND RESISTANCE EXERCISE ON MATERNAL GLUCOSE METABOLISM AND VASCULAR FUNCTION IN OBESSE PREGNANCY

Funded by NIH R01

BARTH SYNDROME DISEASE MECHANISMS AND THERAPEUTIC DEVELOPMENT

Ryan Duncan, PT, DPT, MSCI

Funded by NIH K12

MULTICENTER CAREER DEVELOPMENT PROGRAM FOR PHYSICAL AND OCCUPATIONAL THERAPY

Gammon Earhart, PT, PhD, FAPTA

Funded by NIH R01

WALKING AND MHEALTH TO INCREASE PARTICIPATION IN PARKINSON DISEASE (WHIP-PD)

Brecca Gaffney, PhD

Funded by L'Oreal USA for Women in Science Fellowship

QUANTIFICATION OF BONE SHAPE VARIABILITY, WHOLE-BODY AND JOINT LEVEL BIOMECHANICS OF HIP DYSPLASIA

Funded by NIH F32

EFFECTS OF SIMULATED INTERVENTIONS ON HIP ARTICULAR CARTILAGE LOADING IN PATIENTS WITH FEMOROACETABULAR IMPINGEMENT AND DEVELOPMENTAL DYSPLASIA OF THE HIP

Marcie Harris Hayes, PT, DPT, MCSI

Funded by the Foundation for Physical Therapy Research

COMPARISON OF MOVEMENT PATTERN TRAINING AND MANUAL THERAPY FOR PREARTHRTIC HIP DISORDERS: A PILOT RANDOMIZED CLINICAL TRIAL

Funded by the WU Institute of Clinical & Translational Sciences

MOVEMENT SYSTEM IMPAIRMENTS IN PATIENTS WITH LOWER URINARY TRACT SYMPTOMS

Funded by NIH R21

MOVEMENT PATTERN TRAINING IN PEOPLE WITH INTRA-ARTICULAR, PREARTHRTIC HIP DISORDERS

Michael Harris, PhD

Funded by Lottie Caroline Hardy Trust

BIOMECHANICS AND MORPHOLOGY OF BONE AND MUSCLE IN PATIENTS WITH HIP DYSPLASIA

Funded by NIH K01

MUSCLE GEOMETRY AND ITS INFLUENCE ON FUNCTION IN PATIENTS WITH DEVELOPMENTAL DYSPLASIA OF THE HIP

Elinor Harrison, PhD

Funded by Grammy Museum Foundation

THE USE OF SINGING TO AID GAIT IN PARKINSON DISEASE

Mary Hastings, PT, DPT, MSCI, ATC

Funded by NIH R01

MUSCLE, JOINT AND MOVEMENT DETERIORATION CONTRIBUTING TO NEUROPATHIC FOREFOOT DEFORMITY

Joe Klaesner, PhD

Funded by the Craig H. Neilsen Foundation

WHEELCHAIR PROPULSION TRAINING FOR MANUAL WHEELCHAIR USERS WITH SCI

Funded by the Curators of the University of Missouri

APPLICATION OF THE WMS FOR ADVANCED PHYSICAL THERAPY TRAINING AND ENDURANCE TESTING OF MANUAL WHEELCHAIR USE

Catherine Lang, PT, PhD FASNR, FAPTA

Funded by NIH R01

ISCHEMIC CONDITIONING AS A NEURORECOVERY AGENT FOR STROKE

Funded by NIH R01

TRANSLATION OF IN-CLINIC GAINS TO GAINS IN DAILY LIFE AFTER STROKE

Funded by NIH U01

TRANSCRANIAL DIRECT CURRENT STIMULATION FOR POST-STROKE MOTOR RECOVERY – A PHASE II STUDY (TRANSPORT2)

Jacob McPherson, PhD

Funded by NIH R01

INTRASPINAL MICROSTIMULATION FOR MULTI-MODAL REHABILITATION

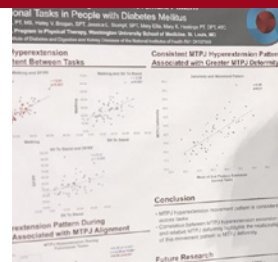
Gretchen Meyer, PhD

Funded by NIH R21

FAT-MUSCLE CROSS-TALK IN THE INJURED ROTATOR CUFF

Funded by NIH R01

ROTATOR CUFF DEGENERATION AND REPAIR



Hana Bernhardson, PT '20

presented at the 2020 CSM conference. Hana's research focused on metatarsophalangeal joint movement patten across functional tasks in people with diabetes mellitus.



Members of PT '22 pose with their WU Masks to encourage people to "Mask Up"



Faculty member **Beth Crowner** will be the Faculty Graduation Speaker for PT '21

Linda Van Dillen, PT, PhD, FAPTA

Funded by NIH R01

SPINAL CONTROL DURING FUNCTIONAL ACTIVITIES TO IMPROVE LOW BACK PAIN OUTCOMES

Funded by the American Physical Therapy Association

IMPACT OF HIP STRUCTURE AND FUNCTION ON THE CLINICAL PRESENTATION OF LOW BACK PAIN



Clinic Associate, **Danielle Ivie, PT,DPT**, interacts with a patient during a telehealth appointment in the 4444 clinical practice gym.

Clinical Practice

The mission of the Clinical Division is to provide high-quality, evidence-based care with compassion. As movement system experts, our clinicians strive to diagnose movement impairments and deliver individualized treatment to optimize function, health and wellness across the lifespan.

“To boldly go where no one has gone before.” When the coronavirus pandemic upended operations at the Washington University Program in Physical Therapy’s clinical sites, the Teletrekkies came to the rescue, quickly taking clinicians and patients into new realms of video-based treatment.

Jen Dubbert, a manager within the Division of Clinical Practice, directed the whimsically named team to move the program’s clinical providers into uncharted territory: a world solely dependent on telehealth.

“There were a lot of questions to be answered in a short amount of time,” Dubbert says. Setting up telehealth through the clinics’ patient portal involved much more than just moving patient visits to the video platform Zoom. Working alongside clinical staff and administrators at the Washington University School of Medicine and with guidance from the American Physical Therapy Association, the Teletrekkies untangled the many legal and reimbursement issues related to telehealth.

“While Jen and her team were working out the technicalities on the back end, we were also working to determine how best to maintain the health and safety of our patients, providers and staff,” says Dr. Greg Holtzman, director of the Division of Clinical Practice. “In the beginning, we brought the clinics to a halt except for a very few post-operative patients. To make sure our patients didn’t feel abandoned in any way, we contacted them by phone to check in, answer questions and keep them updated.”

Slowly, private insurers began to reimburse for video-based visits. By the end of April, Medicare began telehealth reimbursement. At the same time, physical, occupational and speech therapists within the Program’s clinical division began conducting telehealth appointments, navigating the challenges and discovering some surprising benefits.

The Program in Physical Therapy focuses on the human movement system to guide practice. This approach relies heavily on observing and then optimizing movement, which translated well in a video-based context.



Members of the "Teletrekkies" who led the clinical practice's transition to telehealth. From left: Carlee Hill, PT, DPT; Christina Graves, MA, CCC-SLP; Jen Dubbert, PT, Carrie Mosley, MS, CCC-SLP; Joan Scacciaferro, OTR/L, CL; Dale Thuet, PT, DPT, OCS

“Physical therapy does involve hands-on practice, but it’s ultimately about achieving the best level of function to decrease pain, increase mobility or rehabilitate from an injury,” says Dale Thuet, a physical therapist at Washington University Physical Therapy in O’Fallon, Missouri. “We can do a lot through visual appraisal. For instance, I had a patient with neck pain. Typically, I would do a physical assessment on her neck, but via telehealth she could show me exactly where and how she was sitting when her neck hurt. I could make recommendations based precisely on her position and environment.”

Carlee Hill, also a physical therapist at the O’Fallon site, agrees that seeing patients at home is sometimes helpful. “I have a patient who is in a wheelchair, so being able to see how she’s moving with it in her own home allowed me to make some suggestions to help her. It also was easier for her to use telehealth because she didn’t have to travel to and maneuver into the clinic.”

Telehealth can be especially helpful in speech therapy because face masks create a barrier to clinicians demonstrating therapeutic techniques during in-person visits. “My patients with apraxia or aphasia need to be able to visually see my mouth for their therapy,” says Carrie Mosley, a speech-language pathologist with Washington University Program in Physical Therapy at The Rehabilitation Institute of St. Louis.

With new guidance about the coronavirus and precautions in place, many clinic patients resumed in-person visits during the late spring and summer. However, telehealth remains an option for those who are high-risk or live significant distances from the clinical sites.

“It wasn’t easy at first, but I’m proud of the adaptability and teamwork shown by our clinical providers, and in retrospect, this has really advanced our practice,” Holtzman says.



Members of PT '22 volunteered with STL Food Angels to deliver food to St. Louis residents in need as part of the WUPT Month of Service.

Community Engagement

Our students build leadership skills and improve their community through several outreach efforts. This past year, students, faculty and alumni volunteered to support local, national and international organizations.

Washington University Program in Physical Therapy students, faculty and staff look forward to a special community-oriented Day of Service each year. But 2020 wasn't a typical year. When it became clear that large groups wouldn't be able to work in close proximity at service sites due to the coronavirus pandemic, a student committee changed direction. The result was an entire month dedicated to service.

"We first came up with the idea of a Month of Service in August when we realized that scheduling a large, single event wasn't going to work this year," says Emily Miller, a second-year student who was chair of the 2020 service committee. The group designated October as the program's Month of Service, and provided a number of service options that could be performed virtually, individually or in small groups.

"Physical therapy is a service-oriented profession, so I think getting into the community and being involved is important," says Abigail Schruppf, a first-year student who served on the committee.

Miller, Schruppf and other committee members gathered information on various organizations and opportunities and compiled a menu of service options. They challenged their peers and professors to "keep the community service going all month long," and capitalized on the flexibility and convenience of performing service any time during the month. Safety was key, and the committee reminded participants to wear masks, serve outside or virtually, socially distance, and sanitize frequently.

The service brochure created by the committee listed 14 organizations or events, such as the Walk to End Alzheimer's and the

Pride 5K, and encouraged students to seek out additional service opportunities based on personal interest.

Among the many options listed, Schruppf was especially excited about Letters Against Isolation, a program created by a Washington University undergraduate that allows volunteers to write letters to people experiencing pandemic-related isolation in nursing homes. "I think the nursing home population can really benefit from contact, even if it's just through an empathetic letter," she says.

Besides writing letters, Schruppf, Miller and others engaged in a friendly competition. The American Cancer Society Hope Lodge, which provides housing for cancer patients and their families, sponsored 42 Doors of Hope. The Hope Lodge website explained that it "partnered with local artists to create 42 doorways, symbolizing the 42 guest suites available at the new facility." The artistic doors were placed throughout the greater St. Louis area. Students visited the doors and posted photos to social media. The student(s) who posted the most door photos won a monetary donation to Hope Lodge, made by the Program in Physical Therapy in the student's name.

Other special opportunities included collections of items for the Ronald McDonald House, which provides housing for pediatric cancer patients' families, and for Doorways, an organization that provides safe housing and related services to individuals affected by HIV/AIDS.

"We may consider a designated Day of Service within an entire Month of Service next year, so we can continue a longer focus on service going forward," Schruppf says.



Students from PT '22 and PT '23 volunteered with the Special Olympics of Missouri. They assisted with screening tests and provided education to improve strength, balance, and flexibility to the athletes.



Members of the Harris lab swapped a lab meeting for a shift at the St. Louis Food Bank.



Assistant Professor, **Mike Harris, PhD**, delivering food to members of the St. Louis community through the Meals on Wheels program.

Named Scholarships

The **Timothy B. Burnight Scholarship** is awarded to a first-year student who demonstrates exceptional academic promise. **Juliana Jordan, PT '23**

*This scholarship possible through a gift from:
Mr. Tom Burnight*

The **Susan and Robert Deusinger Scholarship** is awarded to a student who has demonstrated exceptional and enduring leadership in the classroom, clinic and/or community.

Elizabeth Tolmich-Searle, PT '22

*This scholarship possible through a gift from:
Dr. Robert H. Deusinger
Dr. Susan Schaefer Deusinger GR80 SW87*

The **Kathleen Dixon Annual Book Fund Award** is given to support the purchase of textbooks.

Ricardo Fernandez, PT '22

*This scholarship possible through a gift from:
Ms. Kathleen K. Dixon
Dr. Shirley A. Sahrman PT58 GR71 GR73 HS*

The **Gina Prescott Earnest Scholarship** is awarded to a student who demonstrates both exceptional academic and clinical performance, and outstanding professional growth and promise.

Jazmon Carroll, PT '22

*This scholarship possible through a gift from:
Mrs. Gina Prescott Earnest PT68
Mr. James M. Earnest*

The **Leonard A. Eastman Annual Scholarship** is awarded to a student with academic promise. **Emily Ryall, PT '22**

*This scholarship possible through a gift from:
Dr. Shirley A. Sahrman PT58 GR71 GR73 HS*

The **Gustel and Edith Kiewitt Scholarship in Physical Therapy** is awarded to a student with academic promise.

Nancy Sun, PT '22

*This scholarship possible through a gift from:
Mrs. Edith H. Kiewitt*

The **Anne Furlong Scholarship** is awarded to a student who demonstrates outstanding academic performance in their undergraduate work.

Danielle Knight, PT '23

*This scholarship possible through a gift from:
Ms. Marie K. Furlong
Mrs. Cathy Schindler
Mr. George Schindler*

The **Guebert/Lake Scholarship** is awarded to a student who demonstrates success in the areas of scholarship, clinical promise, class leadership and service to the community. **Cassandra Chang, PT '22, and Sierra Bains, PT '22**

*This scholarship possible through a gift from:
Mrs. Marilyn Kirkham
Mr. John Kirkham*

The **Robert J. Hickok Scholarship** is awarded to a student who has demonstrated exemplary personal integrity, consistent professional commitment, leadership and excellence in clinical work. **Melli Vytlacil, PT '22**

*This scholarship possible through a gift from:
Mrs. Lisa M. Waeckerle
Mr. William R. Waeckerle*

The **Nancy Palumbo Memorial Scholarship** is awarded to a student who has shown passion and enthusiasm for the Program in Physical Therapy inside and out. **Mason Clay, PT '22**

*This scholarship possible through a gift from:
Mr. Mark Kaufman and Ms. Mary Ann Kaufman
Mr. Fred Palumbo and Ms. Mary Anne Palumbo
Mr. Ray E. Pool III
Ms. Jayne Fleck Pool
Ms. Nancy L. Svenstrup*

The **Shirley Sahrman Scholarship** is awarded to an incoming first-year student with research experience.

Tina Wu, PT '23

*This scholarship possible through a gift from:
Dr. Shirley A. Sahrman PT58 GR71 GR73 HS*



WUPT Alumni **Jenny LaCross** and **Karla Wente** at the 2020 CSM Conference in Denver, CO.

The **Steven J. Rose Diversity Development Award** is awarded to students who have demonstrated academic excellence and contributed to educational diversity in the Program in Physical Therapy.

Abigail Schrupf, PT '23, Tessa Roberts, PT '23, Bailey Cole, PT '21, Anastasia Liu, PT '21, Doan Mackenzie, PT '22 and Raphael Zamora, PT '22

*This scholarship possible through a gift from:
Ms. Carol Lynne Enkoji
Dr. Richard Scott Nelson*

The **Sahrman Assistantship** provides funding for a student to conduct research related to musculoskeletal impairments. **Taylor Tagliferre, PT '23**

*This scholarship possible through a gift from:
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Dr. Shirley A. Sahrman PT58 GR71 GR73 HS*

The **Joye Siroky-Baumann Scholarship** is awarded to a student with academic promise. **Taylor Burlis, PT '22**

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Students create a brachial plexus using yarn as part of a hands-on anatomy lecture.



Faculty Members **Patty McGee** and **Steve Ambler** tour the Instructional Design Studio on the School of Medicine Campus. The studio supports the creation of high-quality video resources by faculty to enhance student engagement with course materials.

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Class Notes and Program Honors



Catherine Lang, PT, PhD, FAPTA

has been named a Catherine Worthingham Fellow of the APTA (FAPTA). This award is the APTA's highest membership category and is intended to inspire physical therapists to attain professional excellence.



Faculty member **Mike Harris** with his winning Virtual Zoom Background. WUPT faculty and staff competed to have a donation made in their name to the charity of their choice.

Hannah Acton, PT'19, was selected by the Academy of Geriatric Physical Therapy as a Centennial Scholar. The Centennial Scholars Program, marking APTA's 100th anniversary in 2021, is a 12-month program aimed at building a cadre of future association leaders. Scholars will be paired with mentors and participate in virtual learning and two in-person events, while working on capstone projects to benefit their sponsors.

Jessica Barth OTR/L, second year Movement Science PhD student and **Stacey Chen, PT'22**, were accepted into the Washington University TLI training program.

Tammy Burlis, PT, DPT, CCS, Steve Ambler, PT, DPT, PhD, MPH, Cheryl Caldwell, PT, DPT, CHT and **Haley Brogan, PT'20**, have been selected to serve on the Education Leadership Partnership's Reactor Panel on Competency-Based Physical Therapy Education. This national panel will provide critical input to shape the future of physical therapy education in the United States.

Associate Professor **Ryan Duncan, PT, DPT, MSCl** was selected to receive the Helen May Bradley Achievement Award, an honor bestowed by Maryville University's PT program to a physical therapist who has made outstanding achievements in the profession. Ryan received this award during Maryville's PT commencement ceremony in December and also served as commencement speaker for the event.

Lindsay Durand, PT'21, won the \$1000 WUPT Federal Advocacy Forum Scholarship. This award is sponsored through the generosity of alumnae **Stephanie Weyrauch, PT'15** and **Allie Smith PT'15**.

Lindsay Durand, PT'21, has been elected to serve as APTA Student Assembly Director of Communications for the 2020-21 year.

Gammon Earhart, PT, PhD, FAPTA was recently named Associate Dean for Physical Therapy at Washington University School of Medicine.

Postdoctoral Research Associate, **Ellie Harrison, PhD**, Movement Science PhD student **Adam Horin** and **Gammon Earhart, PT, PhD, FAPTA**'s publication "Mental Singing Reduces Gait Variability More Than Music Listening for Healthy Older Adults and People With Parkinson Disease" received the Golden Synapse Award recognizing the most outstanding paper published in 2019 in the Journal of Neurologic Physical Therapy.

Assistant Professor **Mike Harris, PhD**, received the 2020 American Society of Biomechanics Junior Faculty Research Award. This is a prestigious award that includes funding to support a research project.

Mary Hastings, PT, DPT, MSCl, ATC received the 2020 Outstanding Faculty Mentor Award presented by the WashU Graduate Student Senate.

Gammon Earhart, PT, PhD, FAPTA

has been selected to serve as a member of the World Health Organization's (WHO) Development Group tasked with creating a "Parkinson's Disease Package of Interventions for Rehabilitation." This team will produce an evidence-based guide to rehabilitation interventions that can be implemented across the continuum of care and around the globe, with a specific focus on low- and middle-income countries.

Catherine Lang, PT, PhD, FAPTA, Linda Van Dillen, PT, PhD, FAPTA, and Gammon Earhart, PT, PhD, FAPTA, are serving on the NIH NINDS/NICHHD Rehabilitation Common Data Elements (CDEs) Working Group. This group is charged with developing data standards for clinical research with the goals of increasing the efficiency and effectiveness of clinical research studies and clinical treatment, increasing data quality, facilitating data sharing and helping to educate new clinical investigators. Catherine is co-chairing the subgroup on Motor Function and Activities of Daily Living. Gammon is a member of this subgroup. Linda is a member of the Emotion, Behavior, Neuropsychology subgroup.



The PT21 Run for Research Committee, comprised of **Alex Dalley, Alana Chaplin, and Kaitlin Zdechlik,** put in a lot of hard work to make the event “happen” in this time of social distancing. In the face of having to cancel the race, the organizers had the brilliant idea to make the race virtual and they had over 125+ people register and participate virtually.

Carey Holleran, PT, MPT, DHS, NCS was selected to participate in the WUSM Teaching Scholars Program (TSP). The TSP is a year-long certificate program focused on healthcare education leadership, scholarship and curriculum development.

PhD students **David May, PT, DPT,** and **Maria Bandres** were elected to be mentors for Wire Together Fire Together, a program that matches graduate students with undergraduates from diverse backgrounds who are interested in neuroscience research.

Movement Science PhD alumnus **Sam Nemanich, PhD, MSCI** accepted a position as an Assistant Professor of Occupational Therapy at Marquette University.

Barbara Norton, PT, PhD, FAPTA received the 2020 WUSM Distinguished Faculty Award for Mentoring of Junior Faculty.

Kat Omnes, PT22, is serving as a Graduate Student Ambassador for the Journal of Humanities in Rehabilitation. In this role, Kat facilitates conversations about the arts and humanities within WUPT. Kat hosted a discussion about the intersections of art, segregation, and rehabilitation in October.



Emily Scherb, PT'09, received the 2020 WUPT Alumni Achievement Award at CSM 2020. Emily was recognized for her numerous contributions to advancing the practice of physical therapy within the circus performing arts.

Class Notes and Program Honors

Continued



Assistant Professor, **Cheryl Smith, PT, DPT, OCS**, with her 2020 CSM poster Graded Exposure for TMD After Trauma.

Professor **Tracy Spitznagle, PT, DPT, WCS**, received a grant from the American Educational Research Association to fund the study entitled, “Needs Assessment for Capacity-Building and Sustainability for the Physical Therapy Training Program at Ayder Referral Hospital in Mekelle, Ethiopia.”

Maggie Bland, PT, DPT, MSCI and **Steve Ambler, PT, DPT, PhD, MPH** are also participating in this grant.

Brendan Thompson, PT'20, was selected to serve on the American Council of Academic Physical Therapy (ACAPT) Task Force on the Needs of the DPT Class of 2020.

Brett Wright, PT'20, received a scholarship from the Academy of Neurologic Physical Therapy to support his participation in APTA’s Federal Advocacy Forum. Brett was selected based upon his advocacy efforts and his descriptions of how he will encourage colleagues to advocate for the physical therapy profession and advance neurologic physical therapy.

Postdoctoral Research Associate **Jen Zellers, PT, DPT, PhD** won an award for the best podium presentation by a fellow at the 2020 International Symposium on Ligaments & Tendons.



Members of **PT '20** and faculty members attended the 2020 Lobby Day in Jefferson City, MO. They met with MO State Representatives and were able to advocate for Direct Access for the state of Missouri.



Assistant Professor **Megan Burgess, PT, DPT, OCS**, observes members of PT '22 in an intensive hands-on lab. This was the first time students and faculty were on campus after a four-month campus shutdown due to the COVID-19 outbreak.

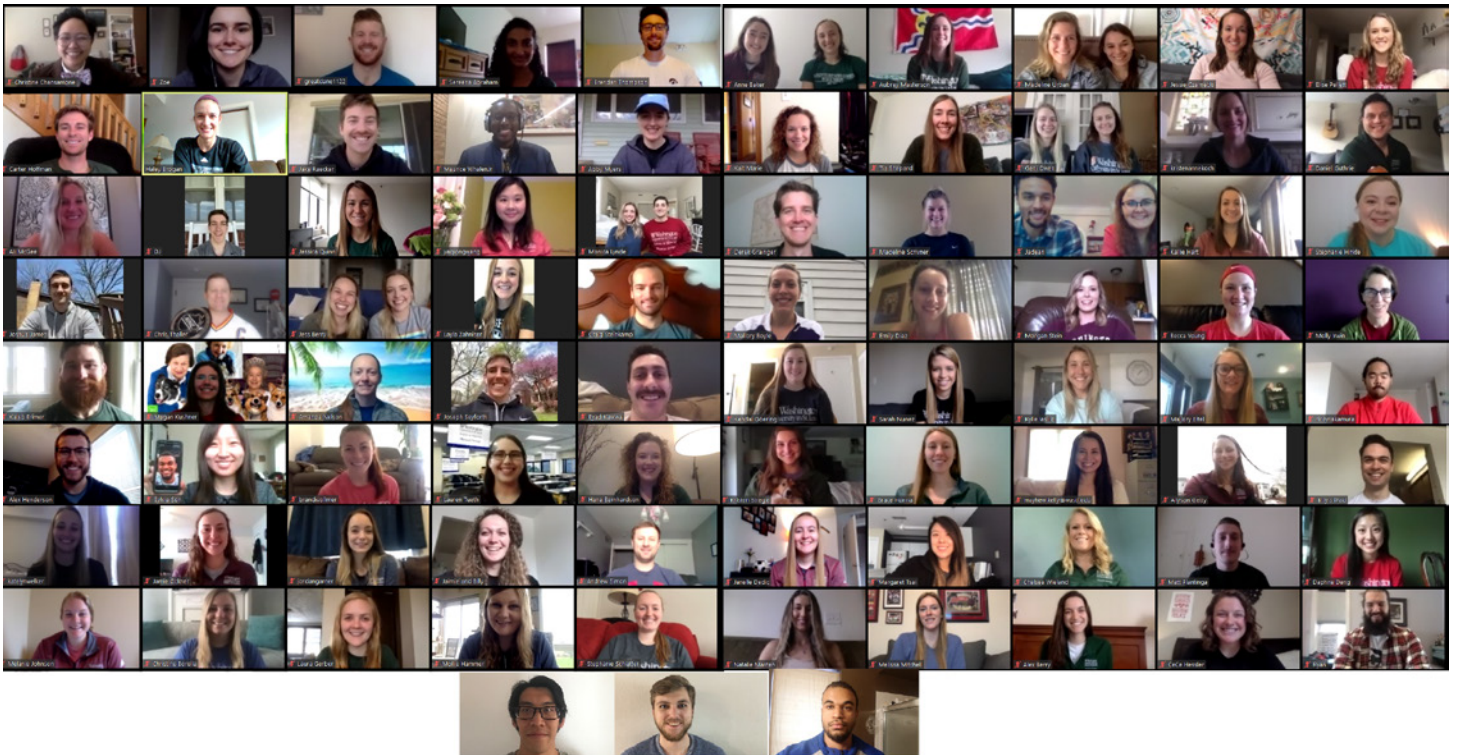


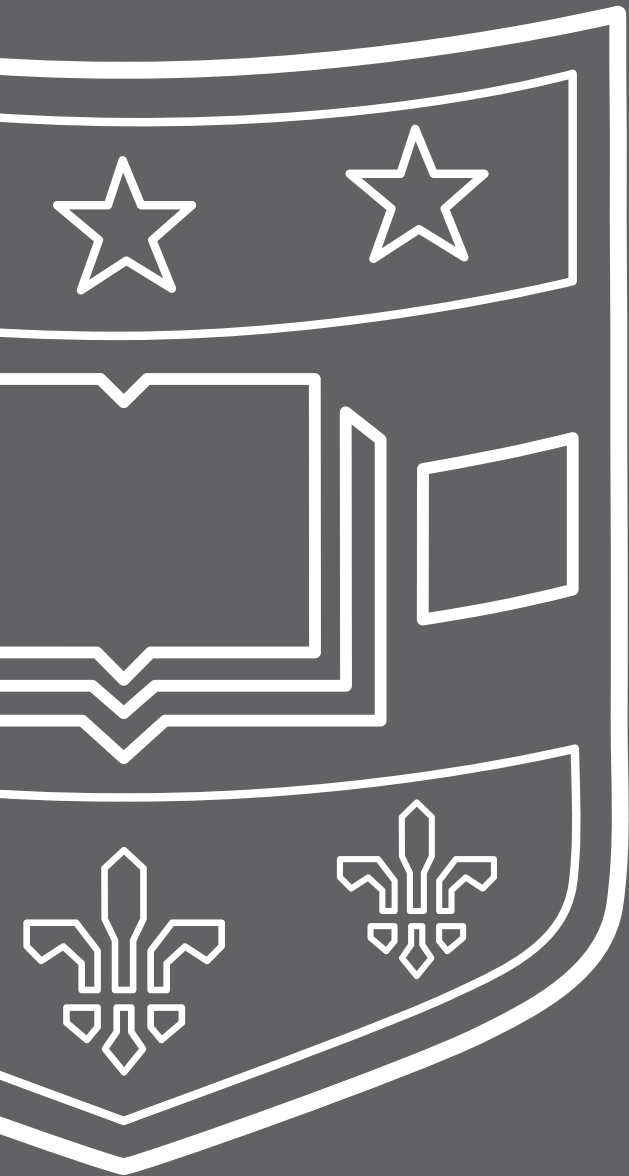
Members of **PT '22** show off their taping skills in Diagnosis & Management of Musculoskeletal Conditions II



Congratulations,

Class of 2020!





 **Washington**
University in St. Louis
SCHOOL OF MEDICINE

Program in Physical Therapy

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