

SPRING 2021

University of Iowa
Department of Physical Therapy and Rehabilitation Science

ALUMNI NEWSLETTER

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MESSAGE FROM THE CHAIR



Richard K. Shields, PT, PhD, FAPTA
Professor, Chair, and DEO

CITIZENSHIP AND UNCERTAINTY: A PATH TOWARDS EXCELLENCE

Throughout our Department's long history, we have woven two threads into the fabric of our mission: developing sound citizenship and understanding how to tolerate uncertainty in a complex world. Our annual 360-degree professionalism assessment of all faculty, staff, and students has helped us develop the virtues of honesty, respect, responsibility, communication, and teamwork within our educational culture.¹ We are reminded, through these assessments, that even though we achieve a promotion, procure a grant, publish a paper, pass a test, treat a patient, graduate, and meet with other successes, our journey towards excellence relies on internalized virtues that must rise to the fore during uncertain times.

We believe that cultivating an ability to thrive amidst uncertainty is critical to our department's pursuit of excellence and is essential for the next generation of health care practitioners. Measuring our students' tolerance for uncertainty is a cornerstone of our Department's educational outcome benchmarking program.² In the last year, a concrete test of our ability to tolerate uncertainty appeared with little warning in the form of a global pandemic; a threat that forced all health care practitioners to undergo a real "gut check" as to who they are, where their commitments lie, and how their own virtues, like taking responsibility, would inform their actions.

Under the prescient guidance of UI Healthcare and Carver College of Medicine leadership, our Physical Therapy and Rehabilitation Science academic community pushed to new heights during this uncertainty. As the UI campus closed in March, we launched the Pandemic Impacts Value over Time (PIVoT) program. Our goal was to transform the interruption of the pandemic into an opportunity to enhance the value of an Iowa DPT education.

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Within one week, faculty transitioned to online instruction, developed COVID-19 learning objectives, and wove them throughout the 104 semester credit hours that we deliver within our program. Even one of our graduates practicing within our medical center contributed new knowledge for our students by pioneering the first rehabilitation protocol for high-acuity COVID-19 during pregnancy.³ We used state of the art technology in the Frank Hazelton Teaching Laboratory to create new material for our core curricula, rather than relying on archived lectures. Just 3 weeks after the closure of campus, we delivered new PT telehealth education programming that allowed our students to bring telehealth knowledge and skills to their clinical rotations, particularly in rural health practices in the Midwest.

I thank our alumni, faculty, staff, and students for their commitment to professional virtues and their unwavering capacity to excel during times of uncertainty.

Richard K. Shields, PT, PhD, FAPTA
Professor, Chair, and DEO

1. Becker M, Dudley-Javoroski S, Shields RK. Professionalism values in health science education: Self- and peer-assessment of faculty, staff, and students. *Journal of Allied Health* 2017;46(3):178-184
2. Shields RK, Dudley-Javoroski S, Sass KJ, Becker M. Benchmarking the educational environment in physical therapy education. *Physical Therapy* 2018;98(8):658-669
3. Mark A et al. Maintaining mobility in a patient who is pregnant and has COVID-19 requiring extracorporeal membrane oxygenation: A case report. *Physical Therapy* 2021;101:1-7

IOWA EDUCATIONAL VALUE CONTINUES TO GROW

RANKING	ACADEMIC PROGRAM	SCORE
1	University of Delaware	4.4
1	University of Pittsburgh	4.4
1	Washington University in St. Louis	4.4
4	University of Iowa	4.3
4	Northwestern University	4.3
4	University of Southern California	4.3

In our continuing journey toward educational excellence, our Department emphasizes two key domains: educational quality and affordability, the factors that determine the “value” of an Iowa DPT education. In 2020, U.S. News and World Report highlighted the quality of the education we offer (table, left).

While we are proud of this recognition, we readily acknowledge that there are many outstanding academic physical therapy programs across the country. Many institutions train top-caliber clinicians who are innovators and leaders in physical therapy care, while also driving scientific discovery with faculty who are global leaders in rehabilitation and educational research.

As we strive toward excellence, we keep part of our attention on the other determinant of educational value; the affordability of a DPT degree. The education we offer is affordable thanks to our efforts to keep tuition low and to the scholarship support that every admitted student receives. This affordability enables us to attract the best-qualified students, both from within Iowa and the rest of the country. The talent and energy that these gifted students bring to our Department pushes us ever farther along our continuing journey toward excellence.

FRIEND TO OUR PROGRAM,

Marion Hazelton Passes Away



Our Department was saddened to hear of the passing of Mrs. Marion Hazelton, 94, in Cedar Rapids on February 8. Mrs. Hazelton was a longtime leader in elementary education in

Iowa. She served for many years as the district project leader/coordinator for early childhood education in the Cedar Rapids public schools. Her late husband, Mr. Frank Hazelton, was an Iowa physical therapy alumnus who led the successful effort to license physical therapists in Iowa in 1965.

In 1998, the Hazelton family established a scholarship fund within our Department that has assisted 47 students to complete their physical therapy education. For many years, Mrs. Hazelton and other members of the family hosted a luncheon for scholarship recipients, creating a personal connection that underscored Frank and Marion's values of service and leadership. In 2003, the family supported the creation of the "Frank Hazelton Classroom", our primary teaching and learning laboratory.

To honor the memory of both of their parents, the family has renamed the scholarship the Frank and Marion Hazelton Memorial Scholarship Fund. Through their generosity, the Hazelton family has helped us to enhance the quality and reduce the cost of an Iowa PT education, enabling us to offer a top-caliber education at an affordable price.

We are grateful for their support and join many others in offering our condolences at Marion's passing.



GARY L. SODERBERG ENDOWED PROFESSORSHIP

Professor Emeritus Gary L. Soderberg PT, PhD and his wife Dr. Loretta Knutson have invested in the future of Iowa physical therapy by creating the Gary L. Soderberg Endowed Professorship in Physical Therapy and Rehabilitation Science. Dr. Richard K. Shields became the inaugural recipient of this Professorship at a ceremony officiated by Carver College of Medicine Dean Dr. Brooks Jackson and by University of Iowa President Bruce Harreld.

Soderberg was recruited to the University of Iowa in 1972 to advance the newly established PhD degree program, which was one of the first in the country. He served as the department's director from 1984 – 1992, overseeing its transformation into a nationally-recognized leader in physical therapy research.

Through his own outstanding scholarship and mentoring, Dr. Soderberg paved the way for the next generation of physical therapy scientists. Now through his and Dr. Knutson's generosity, this endowed Professorship will equip our Department for the next era of advances in scientific discovery and clinical excellence.

Pictured above, left to right:

Lynnette Marshall, University of Iowa Center for Advancement
Bruce Harreld, President, University of Iowa
Dr. Loretta Knutson
Dr. Richard Shields
Dr. Gary Soderberg
Dr. Brooks Jackson, Dean, Carver College of Medicine

DONORS MAKE A DIFFERENCE FOR STUDENTS

"The cost of a DPT degree has created a significant barrier to the ability of recent graduates to achieve financial stability" (APTA, 2020). APTA identified burgeoning student debt as a barrier to increasing diversity within the profession, and student debt may prevent graduates from taking jobs in their desired practice settings.

Our program contends that moderating student debt is key to ensuring that a DPT education is a good financial investment (PTJ 2018). We safeguard the "value" of an Iowa DPT degree (quality/cost) through a robust program of student scholarships. One hundred percent of students graduating from Iowa receive Departmental scholarship support. Generous gifts from many alumni and friends enable our graduates to begin their careers on good financial footing. We are proud that many of our graduates choose to work in rural clinics and in other underserved settings. Without strong financial health, we know it would be much more difficult for students to follow these calls to serve.

Our Department wishes to express its gratitude to all those who have created scholarships for Iowa students. Your generosity is helping our graduates begin their careers with the freedom that comes from strong financial health.

The Tracy Dahl Family
The Frank and Marion Hazelton Family
The Louis and Dorothy Laubenthal Family
The Marilyn M. McCoid Family
The Mary Lou Fairchild Family
The Jean Hammill Family
The Norman and Ruth Goldman Family
The Stanley Mendelson Family
The Gerald and Barbara Lee Graham Family
The Karen and Jeff Kincart Family
The Randy Boldt Family
Kepros Physical Therapy
Rock Valley Physical Therapy
Byron E. Bork, PT
David G. Gerleman

SLUKA RECEIVES OLIVE C. FARR AWARD



In April, the Iowa Physical Therapy Association (IPTA) recognized Professor Kathleen Sluka, PT, PhD, FAPTA with its highest honor, the Olive C. Farr Distinguished Service Award. Farr was the first director of the physical therapy education department at the University of Iowa, serving from 1942 until 1963.

Throughout her career, Dr. Sluka has advanced the frontiers of pain science and translated new discoveries into physical therapy clinical care. She has garnered over 30 million dollars in external grant funding and is recognized as a global leader in pain research. Sluka currently oversees two 5-year, multi-million dollar R01 grants from the National Institutes of Health. She and her multi-disciplinary team are working to identify a metabolic signature ("biomarker") for fibromyalgia, a complex pain disorder that currently can only be diagnosed based on symptomatology. Her team is also working to identify the role of local immune cells in the protective effect of regular physical activity for people with chronic pain.

Dr. Sluka leads two large NIH-funded multi-site trials that are working to reveal how the basic biology of pain can be harnessed by rehabilitation interventions. The Acute to Chronic Pain Signatures (A2CPS) Program aims to identify biomarkers and biosignatures (combinations of several biomarkers) that can help predict whether a patient who experiences an acute pain event will develop a chronic pain syndrome. The Fibromyalgia TENS in Physical Therapy Study (TIPS) is working to determine if the addition of TENS (Transcutaneous Electric Nerve Stimulation) to PT care reduces pain, increases adherence to PT and allows patients with fibromyalgia to reach their specific functional goals with less reliance on pharmaceuticals.

We extend our congratulations to Dr. Sluka on receiving the Olive Farr Award and we await with interest the results of her groundbreaking clinical research.

ALMUNI SPOTLIGHT:

Stanley Mendelson, PT

In 1952 during the height of the polio epidemic, the public was just becoming aware of physical therapy as an essential healthcare profession. In Brooklyn NY, an undergraduate named Stanley Mendelson was working at the post office and pondering a career path. A co-worker introduced him to physical therapy, and Mendelson quickly realized his life's direction. He packed his bags for the University of Iowa to embark on a career of service and leadership that lasted for nearly the next six decades.



Stanley Mendelson, center, and family

AN IOWA FOUNDATION

Stanley Mendelson, PT, is a 1953 graduate of the University of Iowa Physical Therapy program. Now an energetic 90-year-old, as a 22-year-old newlywed he chose Iowa because of its strong reputation and low cost, factors that are still hallmarks of the program today. Mendelson studied under Olive C. Farr, the first director of the program and one of the state's most respected physical therapy pioneers. Ms. Farr ran a tight ship, and Mendelson recalls that "Every time I had a practical exam, I drew the short straw and had to be assessed by her!"

That rigorous Iowa training prepared Mendelson well for a career in clinical practice. He has fond memories of Iowa, despite enduring the worst of our weather. "It was the first time I ever lived through a tornado. We heard this terrible noise all night, and we get up and there's a tree impaled into another tree...there's a tree growing out of a car..." Mendelson and his 28 classmates, many of whom were veterans, finished the 2-year Certificate program and graduated to clinical positions around the country.

Mendelson and his wife, Isabelle, moved to her native New Jersey to begin his career and start their family. He took with him a key message gleaned at a seminar conducted by the Iowa Physical Therapy Association (IPTA): "If you want to make a mark, get involved."

Mendelson began working at Beth Israel Hospital in Newark NJ, then opened a private practice in 1960. For the next decade he balanced his independent practice with continued work in

hospitals and nursing homes, developing expertise in caring for patients with hand injuries and those recovering from trauma.

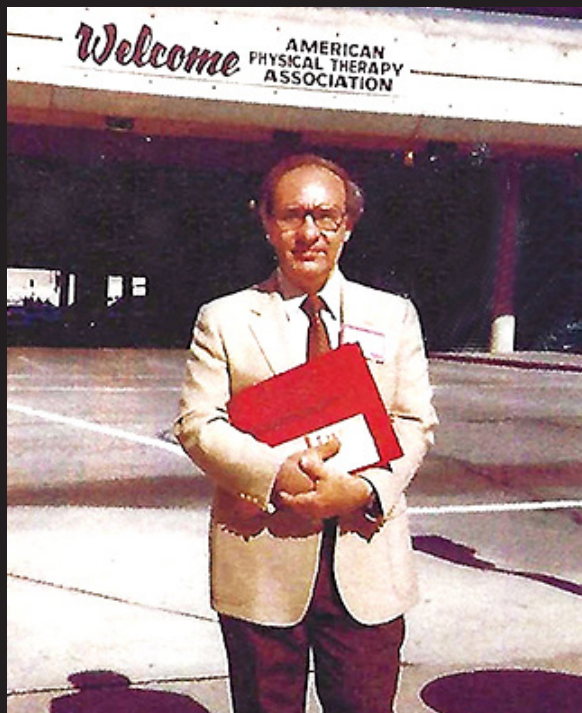
He took the IPTA's advice seriously; early in his career he accepted many responsibilities and leadership roles within the New Jersey chapter of the American Physical Therapy Association (APTA). Mendelson also served on a number of advisory committees for academic institutions in New Jersey, and in the late 1960's he developed a strong interest in teaching. He completed a Master's in Education from Seton Hall University, and in 1972 became an instructor at the newly formed Physical Therapist Assistant program at Essex County College.

"WE'RE ALL TEACHERS"

It quickly became clear that the Essex program faced an uphill battle to graduate PTAs who were ready for the challenges of clinical practice. In this era, standards for training and credentialing of PTAs varied widely and their scope of practice was being codified. Few of Essex's students were prepared for the school's Associates' degree curriculum. Mendelson perceived his first year of teaching to be a failure, as 50% of his students did not achieve a passing grade. His mentor, the director of allied health programs, disagreed; she insisted that a 50% pass rate was evidence of progress, given the educational and social challenges his students faced.

Mendelson redoubled his efforts, and upon becoming program director in 1975 he instituted a range of policies designed to support student success. First, he increased the rigor of the didactic curriculum, insisting that his students learn the biological foundations of the therapeutic techniques they'd use as professionals. Mendelson gradually introduced higher academic expectations and enlisted the stronger students to help their struggling classmates.

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Stanley Mendelson, PT
1983 APTA National Meeting

ALMUNI SPOTLIGHT:

Stanley Mendelson, PT

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Throughout his career as an educator, Mendelson maintained a thriving private practice. He drew a direct link from his work as a clinician to his effectiveness as a teacher. "We're all teachers", he said, "whether we're in teaching or we're in practice. We're all teachers."

In 1983, APTA recognized his work to enhance the success of his students via the Award of Excellence for Minority Recruitment and Services. While he is proud of that achievement, he is most proud that his Essex students "learned what it's like to live in a society. That I'm especially proud of; they learned how to be good people."

RAISING STANDARDS FOR THE PROFESSION

Throughout the 1980's and 1990's, Mendelson drew upon his experience as an educator and clinical leader to help elevate standards for education and licensure across the country. He served with the Commission on Accreditation in Physical Therapy Education (CAPTE) as an on-site reviewer for PTA educational programs, later serving as a reader/consultant for developing PTA programs. In the late 1990's he led the efforts of the Federation of State Boards of Physical Therapy to develop uniform educational standards for foreign-educated PTs. This work created the foundation of the competencies that are still used today.

Mendelson is grateful for the start that Iowa provided to his long and productive career. "I think I owe it all to Iowa. I think I was a great therapist, and I learned well at Iowa."

"I think PT is the greatest profession...the greatest thing I could do in my whole life."

His many trainees and former patients undoubtedly agree.

CONGRATULATIONS, CLASS OF 2020!

Commencement exercises for our Department's 79th graduating class took place on December 18, 2020. Due to the ongoing COVID-19 pandemic, faculty, staff, scholarship donors, and graduates gathered virtually on Zoom to celebrate the class' achievements. Dr. Brooks Jackson, Vice President for Medical Affairs and Dean of the University of Iowa Roy J. and Lucille A. Carver College of Medicine, provided the keynote address.

Thanks to the generosity of many individual and corporate donors, each student in the class received Departmental scholarship support during their studies.

ALUMNI SCHOLARSHIPS

Kayln Hugdahl Jared Lichman

BOLDT FAMILY PROFESSIONAL SERVICE AWARD

Anna Hendrix

FRANK HAZELTON MEMORIAL SCHOLARSHIPS

Jeanna Becker Michael Boykin

GERALD AND BARBARA LEE GRAHAM SCHOLARSHIP

Maria Anstoetter

ILEND TRAINEE SCHOLARSHIP AWARD

Stefanie Cunard Emily Geison

JEAN HAMMILL SCHOLARSHIP FOR PHYSICAL THERAPY

Maria Anstoetter

KEPROS PHYSICAL THERAPY SCHOLARSHIP

Bailey Wetherell

KINCART FAMILY RURAL PT SCHOLARSHIP

Michael Boykin Bailey Wetherell

LOUIS & DOROTHY LAUBENTHAL MEMORIAL SCHOLARSHIPS

Lisa Becker-Schmall Travis Siwec
Emily Geison Matthew Wilson
Jennifer Obman

MARILYN M. MCCOID SCHOLARSHIPS

Jeanna Becker Kathryn Sheehy
Grant Cooper

MARY LOU FAIRCHILD CLINICAL EXCELLENCE AWARD

Grant Cooper

PHIL & MARGE ABOOD SCHOLARSHIP

Margaret Blackford Kameron Kahler
Sara Cassabaum Claire Ludwig
Eric Chestnut Nicolas Ziniel

ROCK VALLEY PHYSICAL THERAPY SCHOLARSHIP

Brian Allsup

TRACY DAHL MEMORIAL SCHOLARSHIPS

Megan Andrew Austin Kreber
Lisa Becker-Schmall Allyson Merfeld
Seth Bonifas Jennifer Obman
Grant Cooper Bailey Wetherell
Katherine Finch Matthew Wilson
Michaela Huey Nicolas Ziniel
Kayln Hugdahl

LEADERSHIP SCHOLARSHIP AWARDS

Megan Andrew Jared Lichman
Seth Eash Kathryn Sheehy

PROFESSIONAL DEVELOPMENT SCHOLARSHIP AWARDS

All

RESILIENCY SCHOLARSHIP AWARDS

All

EXPERIENTIAL SCHOLARSHIP AWARDS

Brian Allsup Melanie Hamilt
Megan Andrew Kayln Hugdahl
Emily Arkenberg Jenitha Jomi
Jeanna Becker Aryn Jones
Lisa Becker-Schmall Joseph Landon
Seth Bonifas Allyson Merfeld
Michael Boykin Nathan Shank
Grant Cooper Kathryn Sheehy
Stefanie Cunard Gabrielle Stecker
Seth Eash Kenan Todd
Katherine Finch Ellie Wallace
Anna Hendrix Matthew Wilson

In addition, several special scholarship awards were announced at the graduation ceremony:

JUDY BIDERMAN PROFESSIONALISM SCHOLARSHIP

Kathryn Sheehy

BYRON E. BORK DEDICATION TO EDUCATION AND SERVICE SCHOLARSHIP

Seth Eash

DAVID G. GERLEMAN DOCTOR OF PHYSICAL THERAPY AWARD

Megan Andrew

FIRST IN FAMILY SCHOLARSHIP

Kameron Kahler

STANLEY MENDELSON SCHOLARSHIP FOR CLINICAL EXCELLENCE

Lisa Becker-Schmall Koleton Cochran

Congratulations to all our 2020 graduates, and best of luck in your PT careers!

PHD GRADUATES BEGIN RESEARCH AND TEACHING CAREERS

The Department is proud to recognize three colleagues who have recently received the PhD degree in Physical Rehabilitation Science:



Amy Kimball, MPT, ATC, PhD was mentored by Dr. Richard Shields and previously completed a master's degree in physical therapy at Iowa. Her PhD dissertation was entitled "Stress Modulation in Individuals with and without Spinal Cord Injury." She is a Clinical Assistant Professor at Iowa and teaches key courses in the DPT curriculum, including Kinesiology & Pathomechanics and Management and Administration I and II.



Dan Wang, BMed, MPT, PhD was mentored by Dr. Laura Frey Law. Her dissertation was entitled "The Characterization of Multisensory Sensitivity in People with and without Chronic Pain." She has accepted a Postdoctoral Research Fellow position in the Human Brain Laboratory at the University of Virginia School of Medicine in Charlottesville, VA.



Josh Bock, PhD was mentored by Dr. Darren Casey. His dissertation was entitled "Cardiopulmonary Responses to Hypoxia Following Inorganic Nitrate Supplementation." He has accepted a Postdoctoral Research Fellow position in the Department of Cardiovascular Medicine at the Mayo Clinic in Rochester, MN.

Our Department congratulates these graduates and wishes them success in their future careers!

PHD STUDENTS RECEIVE FOUNDATION SCHOLARSHIPS

Two current Iowa PhD students have received Promotion of Doctoral Studies (PODS-I) scholarships from the Foundation for Physical Therapy Research. These highly competitive awards support of the coursework phase of PhD studies prior to candidacy.



Andrew Post, PT, DPT, is mentored by Dr. Ruth Chimenti. Dr. Chimenti's Orthopaedic Gait Analysis Laboratory works to enhance the evaluation and treatment of tendon pain, with a focus on altered movement strategies, tissue pathology identified via imaging, sensitization of the central nervous system, and psychological factors.



Kristin Johnson PT, DPT is mentored by Dr. Richard K. Shields. His Human Movement Control/Performance Laboratory investigates the biopsychosocial factors that underlie human performance, using tools that range from genetic/epigenetic studies, evaluation of systemic biomarkers, movement control analysis and assessment of cognitive function.

Congratulations to Andrew and Kristin on receiving PODS-I awards!

SAVE THE DATE!

2021 Physical Therapy Education Summit

“Unconscious Racial Bias:
Where Do We Go From Here?”

Friday, September 17, 2021

Mark your calendar for this important event, and be on the lookout for more information coming soon!

FACULTY PUBLICATIONS FOR 2020

Iwamoto E, Sakamoto R, Tsuchida W, Yamazaki K, Kamoda T, Neki T, Katayose M, **Casey DP**. Effects of menstrual cycle and menopause on internal carotid artery shear-mediated dilation in women. *Am J Physiol Heart Circ Physiol*. 2020 Dec 11. PMID: 33306444

Bock JM, Hanson BE, Asama TF, Feider AJ, Hanada S, Aldrich AW, Dyken ME, Casey DP. Acute inorganic nitrate supplementation and the hypoxic ventilatory response in patients with obstructive sleep apnea. *J Appl Physiol (1985)*. 2020 Nov 19. PMID: 33211592

Giersch GEW, Charkoudian N, Pereira T, Edgell H, Freeberg KA, Craighead DH, Neill M, Allison EY, Zapcic AK, Smith KJ, Bock JM, **Casey DP**, Shenouda N, Ranadive SM, Tremblay JC, Williams AM, Simpson LL, Meah VL, Ruediger SL, Bailey TG, Pereira HM, Lei TH, Perry B, Mündel T, Freemas JA, Worley ML, Baranauskas MN, Carter SJ, Johnson BD, Schlader ZJ, Bates LC, Stoner L, Zieff G, Poles J, Axdams N, Meyer ML, Hanson ED, Greenlund IM, Bigalke JA, Carter JR, Kerr ZY, Stanford K, Pomeroy A, Boggess K, de Souza HLR, Meireles A, Arriel RA, Leite LHR, Marocolo M, Chapman CL, Atencio JK, Kaiser BW, Comrada LN, Halliwill JR, Minson CT, Williams JS, Dunford EC, MacDonald MJ, Santisteban KJ, Larson EA, Reed E, Needham KW, Gibson BM, Gillen J, Barbosa TC, Cardoso LLY, Gliemann L, Tamariz-Ellemann A, Hellsten Y, DuBos LE, Babcock MC, Moreau KL, Wickham KA, Vagula M, Moir ME, Klassen SA, Rodrigues A. Commentaries on Point:Counterpoint: Investigators should/should not control for menstrual cycle phase when performing studies of vascular control. *J Appl Physiol (1985)*. 2020 Nov 1;129(5):1122-1135. PMID: 33197376

Hanson BE, Joyner MJ, **Casey DP**. Sex-Related Differences in Rapid-Onset Vasodilation: Impact of Aging. *J Appl Physiol (1985)*. 2020 Oct 29. PMID: 33119464

Bock JM, Hughes WE, Ueda K, Feider AJ, Hanada S, Kruse NT, Iwamoto E, **Casey DP**. Greater α 1-adrenergic-mediated vasoconstriction in contracting skeletal muscle of patients with type 2 diabetes. *Am J Physiol Heart Circ Physiol*. 2020 Oct 1;319(4):H797-H807. PMID: 32822215

Iwamoto E, Hanson BE, Bock JM, **Casey DP**. Intermittent hypoxia enhances shear-mediated dilation of the internal carotid artery in young adults. *J Appl Physiol (1985)*. 2020 Sep 1;129(3):603-611. PMID: 32702263

Bock JM, Iwamoto E, Horak JG, Feider AJ, Hanada S, **Casey DP**. Aerobic exercise offsets endothelial dysfunction induced by repetitive consumption of sugar-sweetened beverages in young healthy men. *Am J Physiol Regul Integr Comp Physiol*. 2020 Jul 1;319(1):R11-R18. PMID: 32401628

Hughes WE, Kruse NT, Ueda K, Feider AJ, Hanada S, Bock JM, **Casey DP**. Dietary nitrate does not acutely enhance skeletal muscle blood flow and vasodilation in the lower limbs of older adults during single-limb exercise. *Eur J Appl Physiol*. 2020 Jun;120(6):1357-1369. PMID: 32303829

Limberg JK, **Casey DP**, Trinity JD, Nicholson WT, Wray DW, Tschakovsky ME, Green DJ, Hellsten Y, Fadel PJ, Joyner MJ, Padilla J. Assessment of resistance vessel function in human skeletal muscle: guidelines for experimental design, Doppler ultrasound, and pharmacology. *Am J Physiol Heart Circ Physiol*. 2020 Feb 1;318(2):H301-H325. PMID: 31886718

Dillon GA, Shepherd JRA, **Casey DP**, Dinunno FA, Curry TB, Joyner MJ, Ranadive SM. Rapid-onset vasodilator responses to exercise in humans: Effect of increased baseline blood flow. *Exp Physiol*. 2020 Jan;105(1):88-95. PMID: 31762131

Post AA, Rio EK, **Sluka KA**, Moseley GL, Bayman EO, Hall MM, de Cesar Netto C, **Wilken JM**, Danielson JF, **Chimenti R**. Effect of Pain Education and Exercise on Pain and Function in Chronic Achilles Tendinopathy: Protocol for a Double-Blind, Placebo- Controlled Randomized Trial. *JMIR Res Protoc*. 2020 Nov 3;9(11):e19111. PMID: 33141102

FACULTY PUBLICATIONS FOR 2020

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- Bah I, Fernandes NRJ, **Chimenti RL**, Ketz J, Flemister AS, Buckley MR. Tensile mechanical changes in the Achilles tendon due to Insertional Achilles tendinopathy. *J Mech Behav Biomed Mater*. 2020 Dec;112:104031. PMID: 32882677
- Chimenti RL**, Hall MM, Dilger CP, Merriwether EN, **Wilken JM**, **Sluka KA**. Local Anesthetic Injection Resolves Movement Pain, Mo-tor Dysfunction, and Pain Catastrophizing in Individuals With Chronic Achilles Tendinopathy: A Nonrandomized Clinical Trial. *J Orthop Sports Phys Ther*. 2020 Jun;50(6):334-343. PMID: 32349638
- Chang YJ, Liu YC, Hsu MJ, Fang CY, Wong AM, **DeJong SL**, **Shields RK**. Novel human models for elucidating mechanisms of rate-sensitive H-reflex depression. *Biomed J*. 2020 Feb;43(1):44-52. PMID: 32200955
- Dudley-Javoroski S**, Lee J, **Shields RK**. Cognitive function, quality of life, and aging: relationships in individuals with and without spinal cord injury. *Physiother Theory Pract*. 2020 Jan 8:1-10. PMID: 31914347
- Wang D, Merkle SL, Lee JE, **Sluka KA**, Rakel B, Graven-Nielsen T, **Frey-Law LA**. Multisensory Sensitivity is Related to Deep- Tissue but Not Cutaneous Pain Sensitivity in Healthy Individuals. *J Pain Res*. 2020 Oct 7;13:2493-2508. PMID: 33116791
- Carlesso LC, **Frey Law L**, Wang N, Nevitt M, Lewis CE, Neogi T; Multicenter Osteoarthritis Study Group. The Association of Pain Sensitization and Conditioned Pain Modulation to Pain Patterns in Knee Osteoarthritis. *Arthritis Care Res (Hoboken)*. 2020 Sep 3. PMID: 32882103
- Master H, Neogi T, Callahan LF, Nelson AE, LaValley M, Cleveland RJ, Golightly YM, Thoma LM, Zhang Y, Voinier D, Christiansen MB, Jakiela JT, Nevitt M, Lewis CE, **Frey-Law LA**, White DK. The association between walking speed from short- and standard-distance tests with the risk of all-cause mortality among adults with radiographic knee osteoarthritis: data from three large United States cohort studies. *Osteoarthritis Cartilage*. 2020 Dec;28(12):1551-1558. PMID: 32861851
- Stefanik JJ, **Frey-Law L**, Segal NA, Niu J, Lewis CE, Nevitt MC, Neogi T. The relation of peripheral and central sensitization to muscle co-contraction: the MOST study. *Osteoarthritis Cartilage*. 2020 Sep;28(9):1214-1219. PMID: 32585174
- Looft JM, **Frey-Law LA**. Adapting a fatigue model for shoulder flexion fatigue: Enhancing recovery rate during intermittent rest intervals. *J Biomech*. 2020 Jun 9;106:109762. PMID: 32517992
- Mueller M, **Chimenti R**, Merkle S, **Frey-Law L**. Accelerometry analysis options produce large differences in lifestyle physical activity measurement. *Physiol Meas*. 2020 Jun 30;41(6):065006. PMID: 32434175
- Neelapala YVR, Bhagat M, **Frey-Law L**. Conditioned Pain Modulation in Chronic Low Back Pain: A Systematic Review of Literature. *Clin J Pain*. 2020 Feb;36(2):135-141. PMID: 31764164
- Sisante JF, Wang N, Felson DT, Nevitt MC, Lewis CE, **Frey-Law L**, Segal NA; Multicenter Osteoarthritis Study (MOST) Group. Influence of Antagonistic Hamstring Coactivation on Measurement of Quadriceps Strength in Older Adults. *PM R*. 2020 May;12(5):470-478. PMID: 31585496
- Petrie M**, Johnson K, McCue P, **Shields RK**. Neuromuscular Electrical Stimulation Primes Feedback Control During a Novel Single Leg Task. *J Mot Behav*. 2020 Jul 7:1-10. PMID: 32633214
- Petrie MA**, Sharma A, Taylor EB, Suneja M, **Shields RK**. Impact of short- and long-term electrically induced muscle exercise on gene signaling pathways, gene expression, and PGC1a methylation in men with spinal cord injury. *Physiol Genomics*. 2020 Feb 1;52(2):71-80. PMID: 31869286
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RESEARCH GRANT SUPPORT

Ruth Chimenti PT, PhD

Assistant Professor

NIH R00: \$747,000 (PI)

Mechanism-based Treatment Approach to Chronic Tendinopathy Pain

Laura Frey Law, PT, PhD

Associate Professor

NIH-R01, \$1,422,770 (Co-PI)

Metabolic Biomarkers for Fibromyalgia

NIH-U24, \$7,547,998 (Co-PI)

Clinical Coordinating Center for the Acute to Chronic Pain Signatures Program

CDC-T42, \$30,538,747 (Co-PI)

The Heartland Center for Occupational Health and Safety Research Center

Richard Shields, PT, PhD

Professor

NIH-R01, \$1,574,628 (PI)

Musculoskeletal Plasticity after Spinal Cord Injury

NIH-R01, \$1,575,397 (PI)

Long Duration Activity and Metabolic Control after Spinal Cord Injury

Academy of Physical Therapy Education, \$17,000 (PI)

Benchmarking Outcomes in Physical Therapy Education

Kathleen Sluka, PT, PhD

Professor

NIH-R01, \$2,579,385 (PI)

Role of Macrophages in Activity-Induced Pain and Analgesia

NIH-R01, \$1,422,770 (Co-PI)

Metabolic Biomarkers for Fibromyalgia

NIH-UH3, \$26,311,300 (Co-PI) Fibromyalgia TENS in Physical Therapy Study (TIPS): An Embedded Pragmatic Clinical Trial

NIH-U24, \$7,547,998 (Co-PI)

Clinical Coordinating Center for the Acute to Chronic Pain Signatures Program

Jason Wilken PT, PhD

Associate Professor

Department of Defense, \$2,437,788 (PI)

Comparative Effect of Commercially Available Custom Dynamic Orthoses

Department of Defense, \$99,947 (PI)

The Major Extremity Trauma and Rehabilitation Research Consortium (METRC 3)

Department of Defense, \$14,744 (PI)

Objective Clinical Prescription of Passive-Dynamic Ankle-Foot Orthoses to Optimize Patient Outcomes

Department of Defense, \$901,986 (Project Co-PI)

Translating Metabolic Responses to Mechanical Insult into Early Interventions to Prevent PTOA

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