

Winter 2013

# Alumni Newsletter

## University of Iowa Department of Physical Therapy & Rehabilitation Science

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### Physical Therapy Awarded Department Status in Medicine

Effective July 1, 2012, the Board of Regents granted the Physical Therapy and Rehabilitation Science Program department status within the Carver College of Medicine. This designation reflects the broad role that the department undertakes preparing students at the professional level (DPT, MD) and at the scientific level (MA, PhD).

Our department is proud to have equal representation among all departments within the Carver College of Medicine. Our dedicated faculty, staff, and students all contributed to this accomplishment by their sustained commitment to excellence over many years. Our official title is now "Department of Physical Therapy and Rehabilitation Sciences".

## Message From The Chair

*While the future of healthcare and the economy remain uncertain, it is comforting to observe the unwavering commitment of our faculty, staff, students, alumni, and friends of the Physical Therapy Department at the University of Iowa. There are so many people working, "behind the scenes" that enable us to offer a high-quality educational experience for our students.*

*Recently, we were approved as a Department in the Carver College of Medicine, which is a testament to the strength of our faculty, staff, students, and friends. This achievement is also the legacy of our important leaders of the past. Individuals like Drs. Gary Smidt, Gary Soderberg, and David Nielsen helped build the solid foundation that allows us to flourish today.*

*In 2013 the PhD program will celebrate its 40<sup>th</sup> anniversary, a milestone that is unprecedented in physical therapy programs across the country. We now take it for granted that physical therapy faculty members have a vital role as national and international leaders in rehabilitation research. We owe a tremendous debt of gratitude to the visionary leaders who established our PhD program as a bellwether for rehabilitation research.*

*Finally, I am pleased to report that our scholarship opportunities for DPT students continue to grow as we work to keep the rising costs of education more affordable for our students. Indeed, we report in this newsletter the first Louis and Dorothy Laubenthal Memorial Scholarship awarded to a DPT student this year (see story inside).*

*We, as a faculty and staff, are thankful for another productive year and for the many that assist us in staying "ahead of the curve" as an academic department in the College of Medicine. We hope you enjoy the newsletter.*

**Richard K. Shields PT, PhD, FAPTA**

## Faculty Recognitions

Darren P. Casey, PhD

Glenn N. Williams,  
PT, MS, PhD

Richard K. Shields,  
PT, PhD, FAPTA



### Casey Joins Faculty

The faculty and staff are pleased to welcome Darren P. Casey, PhD as Assistant Professor of Physical Therapy and Rehabilitation Science. Starting in fall 2013 he will direct the Exercise Physiology and Pharmacology components of the DPT and PhD curriculum.

Dr. Casey received his PhD in applied physiology with a focus on clinical cardiovascular physiology at the University of Florida. He completed postdoctoral training and served as a research scientist at the Mayo Clinic.

Dr. Casey's research will focus on altered endothelial and vascular function with aging, hypertension and other cardiovascular risk factors. His work will determine how these alterations impact blood flow, exercise tolerance, and overall health. Dr. Casey's research is funded by the National Institutes of Health.

### Williams Awarded Tenure

Glenn Williams, PT, PhD has achieved Tenure status from the Carver College of Medicine. He is an Associate Professor, Director of the Musculoskeletal Biomechanics and Sports Medicine Research Laboratory and Director of Research, UI Sports Medicine.

Dr. Williams' research focuses on neuromuscular plasticity after joint trauma (such as ACL and meniscus tear) and the minimization of muscle atrophy and weakness after injury. He has an interest in post-traumatic osteoarthritis, particularly the relationship between neuromuscular function and OA.

He teaches in the DPT and PhD curricula and has received funding from NFL Charities and the National Institutes of Health via the Comprehensive Opportunities in Rehabilitation Research Training (CORRT) program.

"Glenn is a gifted teacher and outstanding scientist", commented Dr. Rich Shields.

### Shields Receives Maley Award

Dr. Richard Shields, Professor and Chair, was the 2012 recipient of the John H.P. Maley Award for Outstanding Contributions to Leadership in Research. This award is the highest honor given by the Section on Research of the American Physical Therapy Association.

The Research Section remarked that "Dr. Shields has been a tireless supporter of physical therapy research...During this time he has continually contributed to and promoted the science of rehabilitation on a national and international stage. Dr. Shields has set the standard for excellence in research and is certainly a role model for the next generation of physical therapy scholars."

# Louis and Dorothy Laubenthal Memorial Scholarship

*Alison Vandegrift has been awarded the inaugural Louis and Dorothy Laubenthal Memorial Scholarship for 2012-13.*

The Louis and Dorothy Laubenthal Memorial Scholarship was established to provide financial assistance to a first year DPT student at the University of Iowa and to commemorate Louis and Dorothy's belief in the value of education.

Louis and Dorothy Laubenthal had very limited educational opportunities while growing up in rural Iowa in the early 1900's. Though they were academically gifted, family considerations required them to enter the workforce and forego higher education.

Neither Louis nor Dorothy received recognition of their commitment to education during their lifetimes. Now, thanks to the generosity of their grandson Chris Laubenthal, this scholarship will provide that recognition

and memorialize their belief in the importance of education.

The Laubenthal family has deep ties with Iowa's Department of Physical Therapy and Rehabilitation Science. Chris' father, Nick Laubenthal, (69Cert, 70MA) and his step-mother Karla Laubenthal both built successful careers in the University of Iowa Healthcare system and mentored numerous students within the Department.

Chris Laubenthal received BA and MBA degrees from Iowa and shares his grandparents' belief in the value of education. Thank you, Chris, for investing in the education of future Iowa physical therapists by establishing the Louis and Dorothy Laubenthal Memorial Scholarship.



Dorothy & Louis Laubenthal

## 2012 Graduating Class

The Department conferred the DPT degree upon 35 students in the 2012 Commencement ceremony on December 14, 2012. Several members of each class were recognized for their excellence through scholarships and awards.



### Alumni Award

**Jeff Darling, Natalia Mitchell**

### Tracy Dahl Memorial Scholarships

**Jennifer Peters, Amanda Edwards**

### Mary Lou Fairchild Clinical Excellence Award

**Jeff Swartzendruber**

### Judy Biderman Professionalism Award

**Jaime Lang**

### Collin's Pediatric Award

**Michelle Bayer, Katie Jo Risma, Kelsey Scavo**

### ILEND Traineeships

**Katie Jo Risma, Kelsey Scavo**

### Mentor Scholarships

**Jacob Brueck, Lori Conrad, Jeff Darling, Kayla Koch**

### Marilyn McCoid Scholarship

**Amanda Edwards**

### Frank Hazelton Memorial Scholarship

**Lori Conrad**

## Bork Receive Outstanding Commitment to Student Achievement Award



The Outstanding Commitment to Student Achievement Award was presented to Byron Bork, PT, MA, Lecturer in the Department of Physical Therapy and Rehabilitation Science. Byron is in his 37th year of distinguished service in our department. He co-chairs the Faculty, Staff, and Student Affairs Division, which encompasses admissions, recruitment, and financial aid. Byron teaches several courses within the DPT curriculum and coordinates the students' clinical internships. "Byron's commitment to helping students achieve success in their studies and in life is truly remarkable" states Dr. Shields. Congratulations Byron for this special recognition.



## PhD Graduates Impact Education/Scholarship Worldwide

In 1973, under the leadership of Gary Smidt PT, PhD, FAPTA the University of Iowa committed to developing a PhD Program that prepared physical therapists for the rigors of scholarship as academic faculty members. While many thought that the profession was not ready to push for the advanced research training of physical therapists, the leaders at Iowa forged ahead, understanding the need to prepare future faculty for a competitive academic world.

Since 1973, Iowa has awarded nearly 70 PhD degrees and most graduates have entered the faculty or research ranks in the United States and around the world. Forty years later, we clearly understand the “vision of 1973” and appreciate the ground breaking efforts of Iowa’s PT leadership.

Below is a brief update of the PhD graduates from the University of Iowa over the last 20 years. A quick review reveals that these graduates have published over 1,000 scientific papers, garnered millions of dollars of grant funding, made key administrative decisions for institutions, mentored hundreds of successful graduates, given thousands of prestigious presentations, and have advanced the research/education of the profession as a whole. Congratulations to all of our PhD graduates for their leadership in research and education. Each one has a unique story that complements their work in advancing the physical therapy profession.

PICTURED: (1st ROW) Avin, Alston, Anton, Ballantyne, Cassady, Chang, Charmornarmuit, Cuddeford (2nd ROW) Darter, Dudley-Javoroski, Eppen, Farrell, Frey Law, Givens, Houck, Krishnan (3rd ROW) Lin, Littmann, Ludwig, Madhavan, McQuade, Meszaros, Nourbakhish, Ogard, Puthoff (4th ROW) Shields, Rao, Riley, Rosecrance, Schindler-Ivens, Williams, Wu [...and nearly 10 more exceptional graduates in addition to the individuals shown.]

**Sandra L. Cassady, PT, PhD, FAACVPR**  
(D.H. Nielsen, December 1992) Dean of the College of Education and Health Sciences, St Ambrose University. *Dr. Cassady recently gave the Linda Crane Lecture at the 2013 APTA Combined Sections Meeting.*

**Richard K. Shields, PT, MA, PhD, FAPTA**  
(T.M. Cook, May 1992) Professor and DEO, Department of Physical Therapy and Rehab Science, Carver College of Medicine, University of Iowa

**Chitanongk Charmornnarumit Gaogasigam, PT, PhD** (C.G. Kukulka, May 1993) Assistant Professor, Department of Physical Therapy, Chulalongkorn University, Thailand

**Mohammad R. Nourbakhsh, PT, PhD, OCS**  
(C.G. Kukulka, May 1993) Professor, Department of Physical Therapy, North Georgia College & State University

**John C. Rosecrance, PT, PhD, CPE** (T.M. Cook, May 1993) Associate Professor, Environmental and Occupational Health, Colorado State University.

**Margaret M. Weightman, PT, MA, PhD** (C.G. Kukulka, May 1993) Scientist, Sister Kenny Research Center, Abbott Northwestern Hospital, Minneapolis, Minnesota

**Deborah A. Nawoczenski, PT, PhD** (T.M. Cook, August 1993) Professor, Physical Therapy Graduate Program, Ithaca College

**Ying-Tai Wu, PT, PhD** (D.H. Nielsen, August 1993) Associate Professor, School and Graduate Institute of Physical Therapy, College of Medicine, National Taiwan University

**Kevin J. McQuade, PT, MPH, PhD** (G.L. Smidt, May 1994) Associate Professor, Department of Rehabilitation Medicine, University of Washington

**Shun-Hwa Wei, PT, PhD** (G.L. Smidt, August 1994) Professor, National Yang-Ming University, Institute & Faculty of Physical Therapy, Taipei, Taiwan

**Chris L. Zimmermann, PT, PhD** (T.M. Cook, May 1995) Adjunct, Physical Therapy Program, Concordia University Wisconsin

**Margaret L. Alston, PT, PhD** (D.H. Nielsen, December 1995) Assistant Professor, Department of Physical Therapy, University of Maryland.

**Deborah Givens PT, PhD, DPT** (R.K. Shields, August 1997) Professor and Chair, Physical Therapy Department, School of Pharmacy and Health Professions, Creighton University.

**Paula M. Ludewig, PT, MA, PhD** (T.M. Cook, May 1998) Associate Professor, Program in Physical Therapy, Department of Physical Medicine and Rehabilitation, University of Minnesota

**Andrew J. Meszaros, PT, MA, PhD** (R.K. Shields, May 1998) Associate Professor, Doctor of Physical Therapy Program, George Fox University

**Kevin P. Farrell, PT, MA, PhD** (T.M. Cook, December 1998) Professor, Doctor of Physical Therapy Program, St. Ambrose University

**Ya-Ju Chang, PT, MA, PhD** (R.K. Shields, May 1999) Associate Professor, Department of Physical Therapy and Graduate Institute of Rehabilitation Science, Chang Gung University, Taiwan

**Jeffery R. Houck, PT, MA, PhD** (H.J. Yack, December 1999) Professor, Physical Therapy Graduate Program, Ithaca College

**Tyler J. Cuddeford, PT, PhD** (H.J. Yack, July 2000) Director and Assistant Professor, Doctor of Physical Therapy Program, George Fox University

**William K. Ogard, PT, PhD** (H.J. Yack, July 2000) Assistant Professor, School of Health Professions, University of Alabama at Birmingham

**Suh-Jen Lin, PT, PhD** (D.H. Nielsen, May 2001) Associate Professor, School of Physical Therapy, Texas Woman's University

**Sheila M. Schindler-Ivens, PT, PhD** (R.K. Shields, December 2001) Associate Professor, Department of Physical Therapy, Marquette University

**Daniel C. Anton, PT, PhD, ATC** (T.M. Cook, May 2002) Associate Professor, Department of Physical Therapy, Eastern Washington University

**Miao-Ju Hsu, PT, MA, PhD** (D.H. Nielsen, May 2002) Associate Professor, Department of Physical Therapy, College of Health Science, Kaohsiung Medical University, Taiwan

**Ahmed Samir Elokda, PT, MA, PhD** (D.H. Nielsen, December 2002); Physical therapy private practice, Brooklyn, NY.

**Marie K. Hoeger Bement, PT, PhD** (K.A. Sluka, May 2004); Associate Professor, Department of Physical Therapy, Marquette University

**Laura A. Frey Law, PT, MS, PhD** (R.K. Shields, December 2004); Associate Professor, Department of Physical Therapy and Rehabilitation Science, Carver College of Medicine, University of Iowa

**Tammy Eichelberger, PT, PhD** (M Bilodeau, May 2005); Assistant Professor, Doctor of Physical Therapy Program, Samuel Merritt University

**Bryon Ballantyne, PT, MA, PhD** (R.K. Shields, December 2005) Associate Professor, Doctor of Physical Therapy Program, St. Ambrose University

**Jason M. Wilken, PT, PhD** (H.J. Yack, May 2006) Director, Military Performance Laboratory, Center for the Intrepid, Brooke Army Medical Center

**Michael L. Puthoff, PT, PhD** (D.H. Nielsen, May 2006) Associate Professor and Director, Doctor of Physical Therapy Program, St. Ambrose University

**Smita Rao, PT, MS, PhD** (H.J. Yack, July 2006); Assistant Professor, Department of Physical Therapy, New York University

**Preeti J. Deshpande Oza, PT, MA, PhD** (R.K. Shields, May 2007) Assistant Professor, Department of Physical Therapy, University of the Pacific

**Benjamin Darter, PT, PhD** (D.H. Nielsen, July 2007); Assistant Professor, Department of Physical Therapy, Virginia Commonwealth University

**Sangeetha Madhavan, PT, MA, PhD** (R.K. Shields, July 2007); Assistant Professor, Department of Physical Therapy and Rehab Science, College of Applied Health Sciences, University of Illinois at Chicago

**Kim E. (Nielsen) Eppen, PT, MA, PhD** (R.K. Shields, December 2007) Assistant Clinical Professor, Department of Physical Therapy and Rehabilitation Science, Carver College of Medicine, University of Iowa; Physical Therapy Clinical Specialist, University of Iowa Hospitals and Clinics

**Shauna Dudley-Javoroski, PT, PhD** (R.K. Shields, May 2009) Assistant Research Scientist, Department of Physical Therapy and Rehabilitation Science, Carver College of Medicine, University of Iowa

**Chandramouli Krishnan, PT, MA, PhD** (G. Williams, July 2009) Assistant Professor, Director of Neuromuscular and Rehabilitation Robotics Laboratory, Department of Physical Medicine and Rehabilitation, University of Michigan

**Masaki Iguchi, PT, MA, PhD** (R.K. Shields, July 2009) Assistant Professor, Faculty of Health Sciences, Tsukuba University of Technology, Japan

**Nora Riley, PT, MA, PhD** (R.K. Shields, May 2010) Associate Professor, Doctor of Physical Therapy Program, St. Ambrose University

**Keith Avin PT, PhD** (L.A. Frey Law, May 2012): Post-Doctoral Scholar, University of Pittsburgh

**Andrew E. Littmann PT, MA, PhD** (R.K. Shields, May 2012): Assistant Professor, School of Physical Therapy, Regis University



## Alumni Spotlight: Raymond H. Crallé PT

*Iowa PT alumni have achieved distinction in clinical practice, education, and research within our profession. In this section we highlight the accomplishments of Iowa graduates who have changed the practice of physical therapy.*

**I**n a career spanning more than 40 years, Raymond H. Crallé, PT has been a physical therapy pacesetter in South Florida. His commitment to lifelong learning has consistently guided his practice toward new ways to engage his clients with neurologic impairment.

Growing up in Florida, Mr. Crallé's first physical therapy mentor was his mother Ruth, who founded one of the state's first private practices in 1957. In the early 1960's Mr. Crallé served in the United States Marine Corps in the Vietnam conflict. Upon returning to Florida he completed a bachelor's degree and then moved northward to

join Iowa's physical therapy program. He graduated in 1971 and returned to Florida, starting Crallé Physical Therapy Services in 1972.

Through the '80's and '90's Mr. Crallé administered a number of physical therapy clinics in South Florida. While treating patients with an array of neurologic and orthopaedic conditions, he developed a keen interest in pediatric brain injury and cerebral palsy. Many of his young patients experienced brain injury in near-drowning incidents, a particular hazard for an ocean-side community with abundant residential swimming pools.

Most recently, Mr. Crallé has explored the use of hyperbaric oxygen (HBO) as an adjunct treatment for children with brain injury. In this approach, the patient enters a sealed chamber and breathes 100% oxygen at higher-than-normal pressure. HBO is most commonly used to speed wound healing but is currently under investigation for use with neurologic diagnoses. Both the National

Institutes of Health and the Department of Veterans Affairs are currently funding research into the potential efficacy of HBO for brain injured veterans.

Mr. Crallé has engaged several veterans in his community who are struggling with the after-effects of brain injury. As a veteran himself, Mr. Crallé has offered pro bono services to several of these individuals.

To assist his patients and their families with unmet medical expenses, Mr. Crallé founded Hope Springs, Inc. This 501(3)C non-profit provides funding for physical therapy and HBO treatment as well as wheelchairs and adaptive equipment.

We applaud Mr. Crallé for a lifetime of distinguished service in our profession and for being an excellent role model for our students.

## Avin and Littmann receive PhD's

Keith Avin, PT, PhD and Andrew Littmann PT, MA, PhD successfully defended their dissertations and were awarded their PhD degrees in May, 2012.

Dr. Avin's dissertation was entitled "Moderators of Fatigue: The Complexity of Interactions". His PhD advisor was Dr. Laura Frey Law. He has accepted a position as a post-doctoral scholar at the University of Pittsburgh.

Dr. Littmann's dissertation was entitled "Use-Dependent Plasticity of the Human Central Nervous System: The Influence of Whole-Body Heat Stress and Motor Learning." His PhD advisor was Dr. Richard Shields. He has accepted an Assistant Professor position at Regis University in Denver.

**Congratulations, Keith and Andy!**



## Adjunct Faculty Members Receive Transitional DPTs

Lisabeth Kestel, PT, MBA, SCS, LAT and Melanie House, PT, NCS recently received transitional Doctor of Physical Therapy (DPT) degrees through Iowa's adjunct faculty development initiative with A.T. Still University.

Dr. Kestel is the Director of the Department of Rehabilitation Therapies at University of Iowa Hospitals and Clinics (UIHC). She serves on the Admissions and Curriculum & Instruction committees in the Department of Physical Therapy and Rehabilitation Science. As an Adjunct Associate she lectures in the Physical Therapy Management & Administration course in the DPT curriculum.

Dr. House is a Physical Therapy Clinical Specialist in the Department of Rehabilitation Therapies at UIHC, where she provides care to post-surgical patients and to individuals with wheelchair seating needs. As an Adjunct Associate she delivers Neuromuscular Therapeutics course content on topics related to management of clients with spinal cord injury.

## 2012 Faculty Publications

Scholarship is a hallmark of the Physical Therapy and Rehabilitation Sciences Department at the University of Iowa. This year our 10 faculty members made substantial contributions to the corpus of physical therapy knowledge. Congratulations to our faculty for another successful year in advancing new findings in the underlying science and practice of physical therapy.

Barnes JN, Casey DP, Hines CN, Nicholson WT, Joyner MJ. Cyclooxygenase inhibition augments central blood pressure and aortic wave reflection in aging humans. *Am J Physiol Heart Circ Physiol*. 2012 Jun 15;302(12):H2629-34.

Boyan BD, Hart DA, Enoka RM, Nicoletta DP, Resnick E, Berkley KJ, Sluka KA, Kwok CK, Tosi LL, O'Connor MI, Coutts RD, Kohrt WM. Hormonal modulation of connective tissue homeostasis and sex differences in risk for osteoarthritis of the knee. *Biol Sex Differ*. 2013 Feb 4;4(1):3.

Boyan BD, Tosi LL, Coutts RD, Enoka RM, Hart DA, Nicoletta DP, Berkley KJ, Sluka KA, Kwok CK, O'Connor MI, Kohrt WM, Resnick E. Addressing the gaps: Sex differences in osteoarthritis of the knee. *Biol Sex Differ*. 2013 Feb 4;4(1):4.

Braith RW, Casey DP, Beck DT. Enhanced external counterpulsation for ischemic heart disease: a look behind the curtain. *Exerc Sport Sci Rev*. 2012 Jul;40(3):145-52.

Casey DP, Joyner MJ.  $\alpha$ -Adrenergic Blockade Unmasks a Greater Compensatory Vasodilation in Hypoperfused Contracting Muscle. *Front Physiol*. 2012;3:271.

Casey DP, Curry TB, Joyner MJ, Charkoudian N, Hart EC. Acute  $\beta$ -adrenergic blockade increases aortic wave reflection in young men and women: differing mechanisms between sexes. *Hypertension*. 2012 Jan;59(1):145-50.

Casey DP, Joyner MJ. Influence of  $\alpha$ -adrenergic vasoconstriction on the blunted skeletal muscle contraction-induced rapid vasodilation with aging. *J Appl Physiol*. 2012 Oct 15;113(8):1201-12.

Casey DP, Padilla J, Joyner MJ.  $\alpha$ -adrenergic vasoconstriction contributes to the age-related increase in conduit artery retrograde and oscillatory shear. *Hypertension*. 2012 Oct;60(4):1016-22.

Casey DP, Joyner MJ. Compensatory vasodilation during hypoxic exercise: mechanisms responsible for matching oxygen supply to demand. *J Physiol*. 2012 Dec 15;590(Pt 24):6321-6.

Casey DP, Joyner MJ, Claus PL, Curry TB. Vasoconstrictor responsiveness during hyperbaric hypoxia in contracting human muscle. *J Appl Physiol*. 2013 Jan;114(2):217-24.

Casey DP, Mohamed EA, Joyner MJ. Role of nitric oxide and adenosine in the onset of vasodilation during dynamic forearm exercise. *Eur J Appl Physiol*. 2013 Feb;113(2):295-303.

Casey DP, Curry TB, Charkoudian N, Joyner MJ, Hart EC. The effects of acute  $\beta$ -adrenergic blockade on aortic wave reflection in postmenopausal women. *Am J Hypertens* (Accepted - In Press)

Chang SH, Tseng SC, McHenry CL, Littmann AE, Suneja M, Shields RK. Limb segment vibration modulates spinal reflex excitability and muscle mRNA expression after spinal cord injury. *Clin Neurophysiol*. 2012 Mar;123(3):558-68.

Dudley-Javoroski S, Saha PK, Liang G, Li C, Gao Z, Shields RK. High dose compressive loads attenuate bone mineral loss in humans with spinal cord injury. *Osteoporos Int*. 2012 Sep;23(9):2335-46.

Dudley-Javoroski S, Shields RK. Regional cortical and trabecular bone loss after spinal cord injury. *J Rehab Res Dev*. 2012 49(9):1365-1376.

Dudley-Javoroski S, Shields RK. Active-rested stance modulates regional bone mineral density in humans with spinal cord injury. *J Sp Cord Med*. 2013 March [Epub ahead of print]

Elkins JM, Daniel M, Pedersen DR, Singh B, Yack HJ, Callaghan JJ, Brown TD. Morbid Obesity May Increase Dislocation in Total Hip Patients: A Biomechanical Analysis. *Clin Orthop Relat Res*. 2012 Aug 21.

Frey Law LA, Avin KG. Comment on "Can muscle coordination be precisely studied by surface electromyography?". *J Electromyogr Kinesiol*. 2012 Apr;22(2):325-6.

Frey-Law LA, Looft JM, Heitsman J. A three-compartment muscle fatigue model accurately predicts joint-specific maximum endurance times for sustained isometric tasks. *J Biomech*. 2012 Jun 26;45(10):1803-8.

Frey-Law LA, Laake A, Avin KG, Heitsman J, Marler T, Abdel-Malek K. Knee and Elbow 3D Strength Surfaces: Peak Torque-Angle-Velocity Relationships. *J Appl Biomech*. 2012 Dec;28(6):726-37.

Gautam M, Benson CJ, Ranier JD, Light AR, Sluka KA. ASICs Do Not Play a Role in Maintaining Hyperalgesia Induced by Repeated Intramuscular Acid Injections. *Pain Res Treat*. 2012;2012:817347.

Girard O, Koehle MS, MacInnis MJ, Guenette JA, Koehle MS, Verges S, Rupp T, Jubeau M, Perrey S, Millet GY, Chapman RF, Levine BD, Conkin J, Wessel JH 3rd, Nespolet H, Wuyam

B, Tamisier R, Verges S, Levy P, Casey DP, Taylor BJ, Snyder EM, Johnson BD, Laymon AS, Stickford JL, Weavil JC, Loeppky JA, Pun M, Schommer K, Bartsch P, Vagula MC, Nelatury CF. Comments on Point:Counterpoint: Hypobaric hypoxia induces/does not induce different responses from normobaric hypoxia. *J Appl Physiol*. 2012 May;112(10):1788-94.

Hart EC, Charkoudian N, Joyner MJ, Curry TB, Casey DP. Relationship between sympathetic nerve activity and aortic wave reflection characteristics in postmenopausal women. *Meno-pause* (Accepted - In Press)

Iguchi M, Shields RK. Cortical and segmental excitability during fatiguing contractions of the soleus muscle in humans. *Clin Neurophysiol*. 2012 Feb;123(2):335-43.

Iguchi M, Littmann AE, Chang SH, Wester LA, Knipper JS, Shields RK. Heat stress and cardiovascular, hormonal, and heat shock proteins in humans. *J Athl Train*. 2012 Mar-Apr;47(2):184-90.

Klocke NF, Amendola A, Thedens DR, Williams GN, Luty CM, Martin JA, Pedersen DR. Comparison of T1 $\rho$ , dGEMRIC, and quantitative T2 MRI in preoperative ACL rupture patients. *Acad Radiol*. 2013 Jan;20(1):99-107.

Lee JE, Watson D, Frey-Law LA. Psychological factors predict local and referred experimental muscle pain: A cluster analysis in healthy adults. *Eur J Pain*. 2012 Nov 19. [Epub ahead of print]

Littmann AE, Iguchi M, Madhavan S, Kolarik JL, Shields RK. Dynamic-position-sense impairment on perceived knee function in women with ACL reconstruction. *J Sport Rehabil*. 2012 Feb;21(1):44-53.

Littmann AE, McHenry CL, Shields RK. Variability of motor cortical excitability using a novel mapping procedure. *J Neurosci Methods*. 2013 Jan 25. [Epub ahead of print]

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Lu Y, Whiteis C, Sluka KA, Chappelle MW, Abboud FM. Responses of Glomus Cells to Hypoxia and Acidosis are Uncoupled, Reciprocal, and Linked to ASIC3 Expression (Selectivity of Chemosensory Transduction). *J Physiol*. 2013 Jan 21. [Epub ahead of print]

McHenry CL, Shields RK. A biomechanical analysis of exercise in standing, supine, and seated positions: Implications for individuals with spinal cord injury. *J Spinal Cord Med*. 2012 May;35(3):140-7.

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Santos CM, Francischi JN, Lima PP, Sluka KA, Resende MA. Effect of transcutaneous electrical stimulation on nociception and edema induced by peripheral serotonin. *Int J Neurosci*. 2013 Jan 22. [Epub ahead of print]

Sato KL, Sanada LS, Rakel BA, Sluka KA. Increasing intensity of TENS prevents analgesic tolerance in rats. *J Pain*. 2012 Sep;13(9):884-90.

Sato KL, King EW, Johannek LM, Sluka KA. Spinal cord stimulation reduces hypersensitivity through activation of opioid receptors in a frequency-dependent manner. *Eur J Pain*. 2012 Oct 12. [Epub ahead of print]

## Extended Clinical Internship Scholars

Four 2012 Iowa DPT graduates are taking advantage of a unique partnership between the University of Iowa and private clinics in Iowa. Amanda Edwards, DPT, and Alicia Liebe, DPT are extended intern scholars at Rock Valley Physical Therapy in Moline, IL. Jason Abubuhl, DPT, and Jeff Swartzendruber, DPT are affiliated with Performance Therapies, PC in Coralville, IA.

While honing their clinical skills under the mentoring of expert clinicians, these licensed practitioners are also learning key concepts related to developing professional fees and billing for outpatient clinical services. During these post-graduate internships, the students are involved in several advanced educational models, including returning to campus to deliver lectures to current DPT students.

Caitlin Larsen and Kirsten Robertshaw, graduates from the class of 2011, also successfully completed this advanced learning opportunity last year.

## Karla Laubenthal Retires

**Karla Laubenthal is retiring after twenty three years as a faculty member in the Department of Physical Therapy and Rehabilitation Science.**

Karla graduated from the University of Illinois with a B.S. in Physical Therapy in 1977. In 1982 she received her PT master's degree from Long Island University with a specialization in Developmental Disabilities.

Karla embarked on a physical therapy career in Iowa in 1983, joining the Center for Disabilities and Development (formerly known as the Hospital School) at the University of Iowa Hospitals and Clinics. In her role as a Senior Physical Therapist, Karla established herself as an expert clinician treating children with a variety of developmental challenges.

As an Associate in our Department, Karla taught Neuromuscular Therapeutics for many years and developed the Pediatric Physical Therapy course in 2000.



Karla has been a key figure in the Iowa Leadership Education in Neurodevelopmental and related Disabilities Program (ILEND). ILEND prepares graduating physical therapists to offer culturally-competent, family centered care for children with special needs. As an ILEND mentor, Karla played an integral role in the specialized training of over 40 physical therapy students.

Our department extends its thanks and appreciation to Karla for her many years of dedicated teaching and clinical service. We wish her a happy, healthy and fulfilling retirement!

## Research Grant Support (Principal Investigators)

*Physical Therapy and Rehabilitation Science faculty members received over \$7 million in research grants as principal investigators from the National Institutes of Health, the US Department of Veterans Affairs, private foundations, and corporations. Congratulations to all faculty members for their ground-breaking work in discovering new knowledge in physical therapy and rehabilitation science.*

### **Darren Casey, PhD**

#### **Assistant Professor**

NIH-K00, \$503,129, *Impact of Aging on Skeletal Muscle Blood Flow Kinetics During Exercise*

### **Laura Frey Law, PhD, PT**

#### **Associate Professor**

NIH- K01 Research Training Award, \$487,358, *Genetic and Trait Influences on Pain Heterogeneity*

### **Glenn Williams, PhD, PT**

#### **Associate Professor**

DJO, Inc., \$136,381, *Effect of High Intensity Voluntary Exercise and NMES on Quadriceps Muscles after Arthroscopic Partial Meniscectomy*

### **Susanne Morton, PhD, PT**

#### **Assistant Professor**

NIH- R21, \$374,074, *Acquisition and Retention of Locomotor Adaptations After Stroke*

### **Kathleen Sluka, PhD, PT**

#### **Professor**

Medtronic, Inc., \$555,913, *Frequency-Related Mechanisms of Spinal Cord Stimulation (SCS) in a Rodent Model of Neuropathic Pain*

Grunenthal, GmbH, \$75,327, *Effectiveness of GRT6005 in Non-Inflammatory Muscle Pain*

CFD Research Corporation, \$123,991, *Prediction and Mitigation of Back Pain in Military Air Vehicles Phase 1*

NIH- R01, \$2,203,874, *Central Mechanisms Involved in the Interactions Between Muscle Pain and Exercise*

NIH-R34, \$162,367, *Effectiveness of TENS on Fibromyalgia Pain*

### **Richard Shields, PhD, PT**

#### **Professor**

US Department of Veterans Affairs, \$739,200 *Novel Intervention to Influence Muscle Plasticity in Veterans with SCI*

NIH-R01, \$1,531,350, *Mechanical Stress and Skeletal Plasticity after Spinal Cord Injury in Humans*

NIH-R01, \$2,291,510, *Neuro-Musculoskeletal Plasticity After SCI*

Craig H. Neilsen Foundation, \$248,992, *Electrical and Mechanical Stress on Post-SCI Muscle and Bone*

Roy J. Carver Charitable Trust, \$25,000, *Metabolic, Molecular, and Cognitive Responses to Whole Body Heat Stress in Humans*