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Message From The Chair

The exceptional learning culture we enjoy at Iowa is a direct outcome of sustained personal investment by our talented faculty and staff. We have been led by just 6 Department chairs in our 74-year history, a type of stability rarely experienced in academia. Our former Department administrator built a 50-year career with us and our current administrator has surpassed 25 years. The contributions that our former faculty and staff made still reverberate in our daily experiences. We owe our current success to the solid foundation laid by the leaders who preceded us. Our low faculty and staff turnover through the years is a hallmark of our consistent success and our Iowa identity.

We therefore feel both pride and a bit of sadness to announce the impending retirement of Byron Bork, a cornerstone of our faculty since 1976. Byron has indelibly shaped the professional life of each graduating student from the past 40 years. Hundreds upon hundreds of PTs can point to Byron and say "There is a person who I would like to emulate."

How can a Department adjust when someone so central to our shared identity moves on to a new phase of life? Thankfully, a part of Byron's legacy is that he has diligently and skillfully mentored the younger faculty who followed in his footsteps. His integrity, curiosity and affability are vividly displayed by our young faculty whose careers are just beginning. Byron's wise influence will always be felt in our Department. His continued role as an emeritus faculty member will help ease our transition.

For me, Byron is a friend and mentor, occasional golf adversary, reliable sounding board and loyal colleague. In the first article we formally announce Byron's plan to retire and extend an invitation for you to share how Byron shaped your own life as a PT. Please see the highlighted link below for details.

Richard K. Shields, PT, PhD, FAPTA

Byron Bork to Retire



Byron Bork, PT, MA

Byron Bork, PT, MA has announced his intent to retire in September of 2016. Byron has been a member of our faculty since 1976. He has been a key contributor to our recruitment and admissions processes throughout this time. In fact, many of our graduates would identify Byron as their very first "Iowa" acquaintance.

Byron has made lasting contributions to the professional formation of our students as the course instructor for Professional Issues and Ethics, Management and Administration, and Psychosocial Aspects of PT Care.

As Academic Coordinator of Clinical Education (ACCE - a duty he shares with Kelly Sass), Byron oversees the clinical education component of our curriculum.

This is the role by which he is best known to the Iowa physical therapy community. As ACCE he has made hundreds of personal visits over the years to clinical affiliation sites in every corner of the state.

We look forward to joining Byron in celebrating the culmination of his career. We invite you to contact our Department with your messages of congratulations for Byron. Join us in letting Byron know how profoundly he has affected the physical therapy community in Iowa and around the country!

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Congratulations, Class of 2015!

Commencement exercises for our department's 72nd graduating class took place on

December 18, 2015.



Dean Debra Schwinn from the Carver College of Medicine provided opening remarks, congratulating the students on their achievements. Dr. Shields' closing comments challenged the students to "stand up and be counted" as problem solvers in healthcare today.

Faculty members Marcie Becker, Kelly Sass, Carol Vance and David Williams presented the students with certificates commemorating the completion of their DPT coursework. The students were formally "hooded" later that evening at the Graduate College commencement exercises.

A number of students received recognition for honors and awards earned during their time in the Department:

- Alumni Scholarships - Kyle Bernard, Thomas Steffen
- Cardiopulmonary-Health Promotion Award (honoring Dr. David Nielsen) - Nicole Hayden
- Frank Hazelton Memorial Scholarships - Henry Byl, Micah Hayek
- IEND Traineeships - Shari Huber, Kalais Kuhlmann, Paige Richards
- Leadership/Mentor Recognition Awards - Patrick Alt, Kyle Bernard, Henry Byl, Krista Hannasch, Nicole Hayden, Katherine Hoak, Nathan Kleckner, Melony McDermott, Martin McDevitt, Mackenzie Means, Benjamin Stecker, Thomas Steffen, Susanna Stralina, Brittany Treichler, Sierra Turner, Daniel Vogel, Abraham Ward, Leigha Yerk
- Louis & Dorothy Laubenthal Memorial Scholarship - Nathan Kleckner
- Marilyn M. McCoid Scholarship - Patrick Alt, Shari Huber
- Mary Lou Fairchild Clinical Excellence Award - Leigha Yerk
- Rock Valley Physical Therapy Scholarship - Abraham Ward
- Service/Thinking Outside of the Box Award (honoring Dr. Thomas Cook and David Gerleman) - Micah Hayek
- Tracy Dahl Memorial Scholarships - Joshua Krutsinger, Kalais Kuhlmann, Melony McDermott, Mackenzie Means

Sierra Turner received the 5th-annual Judy Biderman Professionalism Award, commemorating Judy's legacy through 50 years as an administrator in our department. Spanning six directors, several changes of location and for nearly 2,000 students, Judy was the core of our team. The award is given to the graduating DPT student who best

exemplifies the principles of professionalism and teamwork on which Judy built her career.

Congratulations to all our graduates! Thank you for the contributions you made to our Department, and all the best as you begin your careers in physical therapy.

DPT Students Attend Combined Sections Meeting



36 members of the 2nd-year DPT class attended the APTA Combined Sections Meeting (CSM) from February 17-20 in Anaheim, CA.

CSM is the main professional forum for presentation of physical therapy research discoveries. This year more than 11,000 PTs and PT students gathered to attend poster and platform presentations, keynote speeches and educational sessions.

DPT student Chelsea Moore said "CSM was a wonderful learning experience. I was exposed to new physical therapy topics and was able to network with physical therapists and students from around the country. I am very thankful to have had support from our Department to attend."

Rural Physical Therapy: An Iowa Priority

A quarter of Iowa's population lives in rural counties, many of which have limited health care facilities. Obtaining physical therapy care can be challenging for rural Iowans, particularly for elders or individuals with physical disabilities.

The APTA projects a workforce shortage of 27,000 physical therapists nationwide by 2020. This shortage will be most keenly felt in underserved areas like Iowa's rural counties. An aging Boomer population in rural Iowa will compound this restriction of health care access.

Solutions to Access Shortages

Several of APTA's recent legislative efforts could help alleviate the shortage of PT providers in Iowa's rural communities. The Physical Therapist Workforce and Patient Access bill (H.R. 2342/S. 1426) would authorize PTs to participate in the National Health Service Corps (NHSC) Loan Repayment Program. If this bill should become law, PTs practicing in rural areas could receive the same loan forgiveness benefits enjoyed by rural physicians, physician assistants, and nurse practitioners. Without the financial pressure of high student loan payments, graduates desiring to practice in rural areas would not be forced to take higher-paying positions in urban areas.

Small rural practices may also soon benefit from the Prevent Interruptions in Physical Therapy Act (S. 313), which passed the Senate Finance Committee in July of 2015. This legislation would extend so-called "locum tenens" provisions to PTs in rural and underserved areas, a benefit currently enjoyed by physicians and other professions. Under this legislation, rural practitioners who must take a leave of absence would be authorized to temporarily contract with another licensed PT to treat Medicare patients. Without this coverage, rural lowans currently face lapses in PT care that can adversely affect their health and independence.

Rural PT in Davis County

Iowa PT alumnus Karen Sloan-Kincart ('83) is a regional advocate for the advancement of PT practice in rural communities. She owns Kincart Physical Therapy Services in Bloomfield, which provides PT services to Davis County Hospital. This facility is designated as a Critical Access Hospital (CAH) by the Centers for Medicare and Medicaid services.

The CAH designation is designed to reduce the financial vulnerability of rural hospitals by creating flexible staffing options and streamlining health care delivery. These hospitals help ensure access to healthcare by keeping essential services such as physical therapy in rural communities.

Sloan-Kincart sees distinct advantages for patients who seek PT care in rural hospitals. The smaller size of the facility ensures that all employees, from the registration staff to the medical residents, are familiar with her clinic. Low staff turnover has enabled Sloan-Kincart to form long-term working relationships with providers from other disciplines. She believes that patients experience enhanced continuity of care thanks to the rootedness of staff in this rural facility.

The biggest challenge for rural PT practice, she continues, is in recruiting new graduates to fill staff vacancies. As described above, graduates often feel financial pressure to seek work in urban settings. Sloan-Kincart counters that rural PT salaries are often on par with urban salaries, especially when considered in light of the low cost of living in rural areas.

The independence enjoyed by rural PTs can sometimes be daunting for new practitioners, particularly if they lack confidence in their problem-solving skills. Sloan-Kincart credits Dr. Gary Soderberg, former Iowa Physical Therapy program chair, for helping her develop the strong clinical reasoning skills she needed to embark in a career in rural practice

Iowa's tradition of molding strong critical thinkers continues to impact the Kincart family: Karen's daughter Jackie Wells is a 2nd-year DPT student in our Department. By helping our students develop strong skills in evidence-based practice and clinical reasoning, we strive to prepare our graduates to practice in every type of setting. We encourage our graduates to rise to the challenge of rural PT practice, helping to meet a critical public health need in our State.



**Karen Sloan-Kincart, PT,
LAT**

Frontiers in PT: Precision Rehabilitation

A new patient walks into your clinic with a referral for rehabilitation after ACL reconstruction. Among other exercises, you prescribe lateral step-downs from an elevated platform.

How would you choose the "dose" of exercise for this client? Most PTs would consider the patient's weight, time post-surgery, previous activity level, and a range of similar factors. But would you consider the patient's DNA genetic profile?

Perhaps not now, but in the future you might. Physical therapy is beginning to intersect with "personalized" or "precision" medicine, a new approach that uses knowledge of a patient's genetic makeup to tailor individualized treatment.

Federal Personalized Medicine Initiative

In 2015, the federal government announced a \$215 million investment in the U.S. Personalized Medicine Initiative. www.whitehouse.gov explains this major new research endeavor:

"Until now, most medical treatments have been designed for the "average patient." As a result of this "one-size-fits-all" approach, treatments can be very successful for some patients but not for others. Precision Medicine, on the other hand, is an innovative approach that takes into account individual differences in people's genes, environments, and lifestyles."

"The future of precision medicine will enable health care providers to tailor treatment and prevention strategies to people's unique characteristics, including their genome sequence, microbiome composition, health history, lifestyle, and diet."

Precision Medicine is Already Driving Healthcare

Already in 2016, dozens of scientific articles have applied a precision medicine approach to diagnoses as diverse as asthma, obesity, diabetes, and many types of cancer.

At present, the main treatments discovered via precision medicine research fall under the umbrella of "pharmacogenomics": tailoring drug selection and dosage to an individual patient's genotype. Patients prescribed Plavix or Coumadin, for example, may expect to be tested for genes that regulate how quickly these drugs are metabolized and excreted.

Of course no genetic test yet exists to help PTs predict how their patients will respond to various doses of exercise and physical activity. But this development may not be too far in the future. Scientists are quickly uncovering the genetic and epigenetic factors regulating atrophy, hypertrophy, tissue regeneration, and even nervous system function. Researchers in our own Department recently helped discover links between a mutation in the BDNF gene, a key neural-protective factor,

and the severity of symptoms in cervical spondylotic myelopathy.

But We're not Geneticists!

As we begin to understand more about how our genes determine our biological response to exercise, physical therapists will need to help their clients navigate this often-confusing new realm of health care.

In some cases, PTs may find it necessary to help clients temper their expectations. Genetic test kits are now commercially available and relatively cheap, allowing members of the general public to gain insight into their genetic traits. A young client who knows she has two working alleles of ACTN3, the widely-publicized "sprinter's gene", may enlist a PT to help transform her into world-class sprint phenom. An alert PT would help her understand that her genetic predisposition for speed is modulated by dozens of other biological and lifestyle factors that together determine her athletic potential.

More prosaically, an awareness of discoveries in precision medicine may help PTs fine-tune exercise prescription for patients with common injuries. In the ACL reconstruction example mentioned above, patients without the ACTN3 gene may be more prone to muscle soreness after eccentric exercises like lateral step-downs. Armed with this knowledge, a PT may adjust this patient's exercise prescription to allow a bit more time for adaptation.

The next generation of physical therapy research will explore the ways that genetic factors can affect patients' responses to rehabilitation interventions. Precision rehabilitation will become an additional tool at the disposal of PTs as they optimize exercise dose prescription for their clients. We ensure that our students receive a "healthy" dose of genomic and epigenomic principles to help them navigate this field in the future.

Department to Undergo Accreditation

To maximize the quality of the education we offer, our Department continuously assesses a variety of performance measures. Some are broad markers of student success: for example, we are proud that 100% of our graduates in the last eleven years have passed the national licensing exam on the first attempt.

We also assess the many factors that contribute to our outstanding student outcomes, such as instructor performance and the congruence of our curriculum with profession-wide norms. Our faculty committees scrutinize program and student outcome measures to determine if we meet our tripartite mission of leadership in clinical education, research, and service.

Every ten years, the Commission on Accreditation in Physical Therapy Education (CAPTE) conducts an accreditation review to assess the quality of the education we provide. Throughout 2015, our faculty analyzed our internal performance metrics and prepared a comprehensive Self-Study Report (SSR). The SSR contains an in-depth critique of our mission, planning and self-assessment process, policies, faculty, students, curriculum, and Department resources.

In April we will host CAPTE reviewers for a 3-day on-site review. The CAPTE team

will review documents such as course materials and will interview our students, faculty and staff.

Preparing the SSR enhanced the focus and intensity of our ongoing self-assessment activities. A year's worth of faculty discussions centered around our curricular content and the tools we use to measure faculty and student performance.

By preparing for accreditation, we gained a clearer appreciation for the strengths of our curriculum. Although CAPTE will only begin requiring inter-professional education (IPE) in 2018, our curriculum already contains a number of specialized IPE courses. Likewise, our faculty have already incorporated cutting edge material on precision rehabilitation, regenerative medicine, pain mechanisms and diagnostic imaging; areas that will soon be considered part of the physical therapy professional corpus.

At its best, an accreditation process should trigger deep self-reflection and instigate process improvement. We feel we have benefitted greatly from this period of intense analysis and discussion. We eagerly look forward to hosting the CAPTE on-site review team this spring.

IRIS: Quantifying Student Readiness

Entry-level physical therapy graduates must possess far more than a collection of "book knowledge". As they begin their careers they must display all the hallmarks of professionalism that typify the very best of physical therapy practice.

Our responsibility as a physical therapy education program is to ensure that our students possess a full suite of professional traits before they engage with the public during clinical affiliations. However, it can be difficult to measure student progress toward "intangibles" like emotional maturity and effective teamwork.

A considerable amount of educational research is directed toward this problem. Several of our faculty are engaged in this scholarly field, and their work has provided a new tool for comprehensively assessing student readiness for clinical affiliations.

The IRIS Assessment

The Iowa Readiness Instrument for Students (IRIS) aggregates information about students' academic performance, psychomotor skill acquisition, and professionalism development. Each student's score is benchmarked to the class average, allowing faculty to identify students who lag behind their peers. The faculty then direct these students toward resources that can help them address areas of weakness and make progress toward curricular milestones.

At the conclusion of didactic coursework, the faculty use the IRIS to examine student readiness for full-time clinical affiliations. Because the IRIS provides a composite score for academic performance, clinical skills and professional traits, our faculty can comprehensively assess student preparation.

Because we monitor student progress throughout the curriculum and intervene early, students are well-prepared to begin their terminal clinical affiliations. In the rare case that a final IRIS score suggests possible concerns, our academic coordinators of clinical education (ACCEs) provide extra monitoring of the student. Communication with the clinical instructor helps the ACCEs verify that the student engages with the public and other clinicians in a safe and skillful manner.

Future of the IRIS

Our faculty piloted the IRIS assessment in 2014 and 2015 and found it to be a useful accompaniment to their own observations and assessments as educators. The IRIS provides our faculty with a helpful tool for gauging the comprehensive development of individual students in comparison to their own classmates. The faculty intend to continue using the IRIS to identify students who could benefit from tutoring, mentoring, and other resources.

Moving forward, our faculty will continue the scholarly investigation of student-readiness metrics such as the IRIS. Ms. Kelly Sass, one of our ACCEs, presented the IRIS at the 2015 APTA Educational Leadership Conference (ELC). The response to Ms. Sass' presentation indicated that PT programs nationwide are eager for better ways to comprehensively measure student progress toward a mature professional identity. Continued work with the IRIS will reveal the extent to which this tool can meet this pressing need in PT education.

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Research Grant Support (**Principal Investigators**)

Laura Frey Law, PT, PhD

Associate Professor

NIH-R03, \$226,500

Phenotyping Evoked Central Sensitivity to Painful Stimuli

Darren Casey, PhD

Assistant Professor

NIH-R00, \$503,129

Impact of Aging on Skeletal Muscle Blood Flow Kinetics During Exercise

American Heart Association, \$71,500

Dietary Nitrates and Vascular Function in Patients with Peripheral Artery Disease

Stacey DeJong, PT, PhD

Assistant Professor

Foundation for Physical Therapy New Investigator Fellowship Training Initiative, \$78,000

Changes in Corticomotor Divergence and Upper Limb Synergies after Neural Injury.

NIH K-12: Multicenter Career Development Program for Physical and Occupational Therapy, \$125,620
Comprehensive Opportunities in Rehabilitation Research Training (CORRT):

Cortical Mapping with Transcranial Magnetic Stimulation after Stroke

Kathleen Sluka, PT, PhD

Professor

NIH- R01, \$2,203,874

Central Mechanisms Involved in the Interactions Between Muscle Pain and Exercise

NIH-UM1, \$3,218,011

FAST: Fibromyalgia Activity Study with TENS

NIH-N01, \$77,871 (co-PI)

NIH Pain Consortium Centers of Excellence in Pain Education

Richard Shields, PT, PhD

Professor

NIH-R01, \$1,531,350

Mechanical Stress and Skeletal Plasticity after Spinal Cord Injury in Humans

NIH-R01, \$1,566,625

Musculoskeletal Plasticity after Spinal Cord Injury

NIH-R01, \$1,566,625

Long Duration Activity and Metabolic Control after Spinal Cord Injury



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Please send this newsletter to your classmates and remind alumni to update their contact information with Carol Leigh (carol-leigh@uiowa.edu).

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