Welcome to the Health and Kinesiology Winter 2017 newsletter. The Spring semester has just started and our halls are overflowing with our fantastic students shuttling between classes and research laboratories. While the weather is cold outside, you will read in this issue that we are heating up the halls of Lambert Gymnasium with new grants, new publications, and new entrepreneurial activity. You will read about our newest faculty members, a talented group of hard working professionals dedicated to learning and advancing our discovery, learning and engagement missions. You will see the work done by our students that demonstrates the “Boilermaker” spirit – award winners at professional conferences and at making a difference in our communities. After reviewing each edition of our newsletter, I always think – WOW – what a great group of students and faculty. After viewing the newsletter, I hope you will agree that we are on the right track. This is all possible through the support of the best Alumni and Friends of Purdue University – you – so thank you. After reading the newsletter, consider sending us a note, whether updates, accomplishments, comments, or anything else you would like to share with us at HK@purdue.edu. And as always, please visit us in historic Lambert Fieldhouse the next time you are in West Lafayette. To find the latest in what is happening in Health and Kinesiology, visit us on the Internet at www.purdue.edu/hhs/hk.

Do you have Sitting Disease? The average American spends almost 8 hours of their waking day in sedentary behaviors. Even avid exercisers aren’t exempt from the deleterious effects of excess sitting (see page 11 for more)
HK Graduate Students

AUGUST 2016 GRADUATES
Andrew Eberline  PhD  Pedagogy
Shaina Riciputi  MS  Sport Psychology
Angelitta Spells  PhD  Health Promotion
Jessica Weiss  MS  Exercise Physiology

DECEMBER 2016 GRADUATES
Ian Brumm — Master of Science
Margaret O’Brien — Master of Science
Cassandra Pendleton — Master of Science
Justin Sinz — Master of Science

HK Grad & Undergrad Students at Midwest Chapter of American College of Sports Medicine

Brian Sullivan Wins Best MS Poster at WACSM

EFFECTS OF OBESITY AND RESISTANCE EXERCISE ON SKELETAL MUSCLE ACETYL COA CARBOXYLASE PHOSPHORYLATION
Brian P. Sullivan, Jessica A. Weiss, Ronald T. Garner, Yaohui Nie, Timothy P. Gavin

IMPAIRED SKELETAL MUSCLE CAPILLARIZATION IN MIR-133A DEFICIENT MICE, Aaron P. Wilson, Yaohui Nie, Timothy P. Gavin
Thanks to a $1.15 million grant, Purdue University health experts will work closely with Jackson and Lawrence counties to develop and implement community-wide strategies to deal with a high incidence of adult obesity.

The Centers for Disease Control and Prevention awarded the two-year grant, "Reducing obesity in Indiana through community involvement to increase prevention," to Tim Gavin, professor and head of the Department of Health and Kinesiology. Gavin is partnering with Purdue Extension to use the Community Champions for Healthy Indiana, which is designed to build community leadership and support resources to address local health needs.

"Obesity is a serious public health concern, and fixing the problem begins with understanding and supporting each individual community’s needs," Gavin said. "Each Purdue Extension office is a trusted community resource, and that gives us a foundation to build on as we work together to create long-term solutions for this public health problem."

Also collaborating on the project are Donna Vandergraff, a nutrition specialist with Purdue Extension; Willie Burgess, managing director of the Discovery Learning Research Center; and Weiling Li, assessment specialist at the Discovery Learning Research Center; as well as Joni Muchler, extension educator from Jackson County, and Katie Zuber, extension educator from Lawrence County. The Discovery Learning Research Center will evaluate the success of the interventional strategies. The grant runs through October 2018.
Four former Health and Kinesiology student-athletes, all highly accomplished and wonderfully decorated, make up the 2016 class of the Purdue Intercollegiate Athletics Hall of Fame. The HK Boilermakers selected for induction are . . .

- **Norman Cottom** — BS, 1935 (being inducted posthumously)
- **Travis Dorsch** — PhD, 2013
- **Noel Ruebel** — BS, 1978
- **Shauna Stapleton** — MPH, 2013

*Norman Cottom* was a three-year letterwinner as a basketball forward from 1933 to 1935 and also earned one letter in track & field. As a junior, he led the Western Conference in scoring with 9.9 points per game while shooting 72.5 percent from the field en route to Helms Athletic Foundation consensus All-America honors and first team all-conference accolades. Cottom was team co-captain his senior season, when he shot 67.3 percent from the field. The Boilermakers posted a 45-13 overall record and 25-11 Western Conference record over the course of his career under Hall of Fame head coach Ward "Piggy" Lambert, winning conference championships in 1934 and 1935. Cottom played for the Indianapolis Kautskys of the National Basketball League from 1935 to 1937, followed by one season with the U.S. Navy Pre-Flight team. He subsequently became a prep basketball coach at Gerstmeyer High School and at his alma mater, Wiley High School, in Terre Haute, Indiana, before moving to Fullerton, California, to become chairman of the social studies department at Fullerton Union High School. Cottom, who died in 1972, was inducted posthumously into the Indiana Basketball Hall of Fame in 1978.
Travis Dorsch earned four letters in football from 1998 to 2001 and two in baseball. He finished his career as the Big Ten leader with 68 field goals and 355 kicking points and ranked fifth with 151 PATs. Through the 2015 season, his field goal total ranked fifth in conference history and his point total was seventh. He set Purdue season records for field goals (22 in 2001, now second), field goal percentage (.815 in 2001, now third) and punting average (48.1 in 2001), and career marks for field goal percentage (.701, now second) and punting average (48.5). As a senior, Dorsch received the Ray Guy Award as the nation’s outstanding punter, was a consensus All-American punter, earned All-America honors as a kicker and was a finalist for the Lou Groza Award (nation’s outstanding kicker) and the Masi Tatupu Special Teams Player of the Year Award. He was the first Purdue consensus All-American since 1986 and the first player in Big Ten history to earn first team all-conference honors as both a punter and kicker. Dorsch led the nation with an average of 48.4 yards per punt while topping the Big Ten and ranking tied for third nationally with an average of 1.82 field goals during the 2001 regular season. Dorsch was a second team Academic All-American as a senior, a two-time academic all-district selection and a four-time Academic All-Big Ten honoree (three times in football and once in baseball). He also was a Phi Beta Kappa inductee. Dorsch was selected by the Cincinnati Bengals in the fourth round of the 2002 NFL Draft (No. 109 overall) and played for one season before subsequently playing for the Rhein Fire of NFL Europe in 2005 and 2006. He earned his Ph.D. in sport & exercise psychology from Purdue in 2013 and currently is an assistant professor and founding director of the Families in Sport Lab in the Department of Family, Consumer, and Human Development at Utah State University.

Noel Ruebel earned four letters in track & field from 1975 to 1978. He was a two-time All-American (once indoors and once outdoors), four-time Big Ten high jump champion (three times indoors and once outdoors) and two-time team Most Valuable Performer. As a senior, Ruebel received the Big Ten Medal of Honor for demonstrating great proficiency in scholarship and athletics, the Varsity Walk Award as the outstanding senior who participated as a varsity athlete and brought national recognition to Purdue, and the Red Mackey Award for displaying leadership, loyalty and integrity. His personal-best mark of 2.19 meters (7-feet, 2.25-inches) currently ranks seventh on Purdue’s all-time outdoor high jump list. Ruebel was an assistant coach for the Boilermakers from 1983 to 1995, coaching 11 All-Americans, 21 Big Ten champions and 35 NCAA qualifiers, including current assistant coach Chris Huffins, who went on to earn a bronze medal in the decathlon at the 2000 Olympic Games. Ruebel subsequently was an assistant at Ohio State (1996) and Wake Forest (1997-99) before serving as head coach at Wake Forest in 2000 and 2001. He currently is coaching at Forsyth Country Day School in Lewisville, North Carolina, and has been named Piedmont Athletic Conference of Independent Schools Coach of the Year seven times. At Highland (Indiana) High School, Ruebel became the first high school athlete in the country to clear seven feet in the indoor high jump. He was inducted into the Indiana Track & Field Hall of Fame in 1981. Ruebel has earned a multitude of medals competing in masters events, including a silver medal in the pentathlon and a bronze medal in the 60-meter hurdles at the 2012 World Masters Indoor Championships in Jyvaskyla, Finland.

Shauna Stapleton was a four-year letter winner in soccer from 2004 to 2007 and is the first soccer player inducted into the Purdue Intercollegiate Athletics Hall of Fame. She set the school record by playing in 87 matches (now third all-time), while accumulating 15 goals and 14 assists (tied for 10th in school history) for 44 points as a midfielder. As a senior, Stapleton was tri-captain of the most successful team in program history. She scored 10 goals (tied for the third-most in school annals) and had a school-record 11 assists for 31 points (second all-time), as the Boilermakers went 20-2-3, won the Big Ten Tournament championship and advanced to the second round of the NCAA Tournament. Stapleton, who was selected Offensive Most Valuable Player of the Big Ten Tournament, was named first team Academic All-American, Soccer Buzz third team All-American, first team All-Great Lakes Region and first team All-Big Ten. She was the National Soccer Coaches Association of America National Player of the Week after scoring the only goal as Purdue beat No. 1-ranked Portland. In addition, Stapleton became the first Boilermaker soccer player (and remains the only one) to earn the Big Ten Medal of Honor for demonstrating great proficiency in scholarship and athletics and the Varsity Walk Award as the outstanding senior who participated as a varsity athlete and brought national recognition to Purdue. The three-time Academic All-Big Ten honoree majored in entomology, was inducted into the Mortar Board national honor society and received the Flora Roberts Award, which is presented annually to an outstanding senior woman at Purdue to honor her scholarship, leadership, character and service to the university community. After graduation, Stapleton served in Teach for America and earned a master’s of public health degree from Purdue. She currently works for the College of Health and Human Sciences at Purdue and is in her third season as the head girls’ soccer coach at West Lafayette (Indiana) Junior/Senior High School.
Health and Kinesiology Offers Cancer Wellness Program for Cancer Survivors at Ismail Center

Purdue’s Department of Health and Kinesiology and YWCA Greater Lafayette are offering a Cancer Wellness Program for cancer survivors.

The eight-week program will be offered Oct. 24-Dec. 16 at Purdue’s Ismail Center in Lyles-Porter Hall, Room 1130. Participants will meet 5:15 to 6:15 p.m. on Mondays, Wednesdays and Fridays. The session will feature yoga, cardio, strength training, stretching/flexibility and relaxation exercises, and assessments will be made by an exercise specialist.

Nancy Kester, HK Advisor

is 2016 Special Boilermaker

This award established by the Purdue Alumni Association in 1981 to recognize and honor special people who have contributed significantly to the improvement of the quality of life and the betterment of the education experience for a substantial number of students and whose life-works have improved the public image of the University. Therefore contributing to the continuing respect for the University.

Starting out as captain of Purdue’s first women’s volleyball team over 30 years ago and never leaving her beloved Purdue, Nancy has touched the lives of countless student, staff and faculty through her roles in athletics, Stewart Cooperative House and academic advising. From player, to team captain, to long-time serving academic advisor, she has influenced young lives as a mentor, role model and friend. One of her nominators said, “Nancy’s wisdom is always gently offered.” And another: “Nancy makes others shine and makes them feel special and that they matter. In the process she is not aware that she is the brightest star and the warmth of her star inspires us all.” Words used to describe Nancy are “Indispensable” “Wonderful positive attitude” “Priceless,” “An essential member of the academic program at Purdue”, “Humble, wise, and a rock for Stewart Cooperative,” “Nancy was my angel,” “Goes above and beyond,” “faithful service,” “An asset to Purdue,” “a champion for her students’ academic and professional goals” “unquestioned integrity and passion for Purdue and student success” “dynamic spirit within an unassuming nature” and lastly “a Boilermaker through and through.” Nancy remains a champion for her students reaching their professional goals.
A Purdue-related startup has developed a low-cost, easy-to-use, software application that is able to capture human movement, providing clinicians such as physical therapists more comprehensive and quantitative information regarding a patient's prognosis.

The technology also has educational potential for exposing students to motion capture technology and quantitative assessments of human movement at both the undergraduate and professional levels.

Humotus LLC, which formed its name by combining the first two letters of human and the Latin word motus, meaning movement, has developed an app that combines the capabilities of the company's software interface with Microsoft Kinect, a motion sensor add-on for the X-Box One console, which can be used with any Windows PC supporting USB 3.0.

The company was co-founded by Samuel Pontecorvo, who has a master's degree from Purdue's Department of Health and Kinesiology, and Joshua Liddy and Jeff Haddad, a doctoral student and an associate professor, respectively, in the Department of Health and Kinesiology.

Humotus' application, called Kinetomatics, utilizes technological advancements made in the realms of computer vision, motion capture and active gaming technology. These advancements provide clinicians, researchers and students with increased device portability, a more naturalistic setting to analyze patients, and automation when tracking body movements.

SmartGait LLC is a start-up company based on the collaboration of Dr. Shirley Rietdyk (Health and Kinesiology) and Dr. Babak Ziaie (Electrical and Computer Engineering), with the goal of reducing falls in older adults. Falls are the leading cause of fatal and non-fatal injuries in older adults, resulting in loss of independence and financial burden (predicted to exceed $54 and $101 billion in 2020 and 2030). Primary care physicians report that they do not have the knowledge and time to complete fall-risk assessments. SmartGait LLC evaluates fall-risk in older adults before a fall has occurred. Fall-risk assessment allows the timely deployment of preventive measures and allocation of limited medical resources. Dr. Rietdyk is the Chief Scientific Officer of SmartGait LLC, and she will direct the development goals and validation assessments of the funded research.

Drs. Rietdyk and Ziaie have disclosed their financial interests in SmartGait LLC to Purdue University, and the University is managing any associated conflicts.

SmartGait LLC receives $225K in funding from National Science Foundation

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Before joining Purdue University in the summer of 2016, Chad Carroll was an associate professor of physiology within the Arizona College of Osteopathic Medicine (2008-2016). Prior to his first academic appointment, Chad completed a Bachelors degree in exercise science from Lake Superior State University, Sault Ste. Marie, MI (1999), followed by a master's degree in exercise physiology from the Ball State University Human Performance Laboratory (2001), and a PhD in Physiology and Biophysics from the University of Arkansas for Medical Sciences, Little Rock (2004). He then completed a post-doctoral fellowship at the Human Performance Laboratory at Ball State University. The long-term goal of Chad's research is: 1) to contribute to the development of effective treatments for tendon pain and injury and 2) to better understand the mechanisms regulating tendon adaptations to exercise.

Cassandra Ledman joined Purdue H&K in the fall of 2016. She is an exercise physiologist by trade. Cassandra has worked for Lutheran Hospital, The Cleveland Clinic and most recently IU Heath Ball Memorial Hospital. Cassandra has also taught Anatomy & Physiology and Fitness courses at Ivy Tech as an adjunct faculty member for 3 years. She received her B.A. In Health & Fitness from Purdue University in 2006 and her M.S. In Clinical Exercise Physiology from Ball State University in 2008. Cassandra is a proud wife and mother to 2 boys (Jude, almost 3, and Miles, 9mo). She is a running enthusiast who loves being outdoors, and being crafty in the kitchen. She is very excited to be joining the H & K department this fall!

Dr. Scott Lawrance joined Purdue HK as an associate clinical professor in the fall of 2016. Scott holds state licenses in both athletic training and physical therapy. He completed his undergraduate training at Butler University, Master's degree at Middle Tennessee State, and Master's and Doctorate degrees at The University of Indianapolis. His general research interest includes studying lower limb asymmetries and the link to injury risk. He is certified scuba diver and enjoys all water sports.
Seven Health and Kinesiology students were honored with Academic All-Big Ten acclaim for the fall season.

HK Academic All Big 10 Recipients

Women’s Cross Country:  
Anna Dolce  
Jenna Halderman  
Reagan Lear

Football:  
Markus Bailey  
Austin Larkin  
Anthony Mahoungou

Volleyball:  
Faye Adelaja

“Sitting Disease”

By Cassandra Ledman, HK Clinical Assistant Professor

A lot of us are stuck at our desk throughout the day, and this can be detrimental to our health. The term ‘sitting disease’ is used by the scientific community when referring to the ill-effects of an overly sedentary lifestyle. Think about all the hours you spend sitting at your computer, driving, eating, sitting in front of the tv, surfing the web, etc. For the average office worker this time totals about 10-12 hours daily. Time spent sitting has been shown to increase one’s risk for multiple diseases: CVD, DM, stroke, cancer, depression, etc. Some researchers have gone so far as to say that ‘the office chair’ is worse for health than smoking! Even avid exercisers who spend multiple hours a day sitting may be at an increased risk.

So how do we offset this risk?

Integrating in standing time of 2 – 4 hrs. during the workday is ideal. This can be incorporated by: taking 5 minute breaks to walk around, standing up to work for 15 minutes of every hour, walking to your co-workers office to communicate versus emailing/calling, taking/making your call standing, etc. Metabolism slows down ~90% after sitting for 30 minutes. Set an alert on your phone/computer every 30 minutes to remind you to stand/move around. Very small integrations of walking and standing throughout the day can significantly decrease our total time spent sitting.

But, what about structured exercise? This of course is valuable too. But, someone can exercise and be sedentary the rest of the day, also known as the ‘active coach potato’. New research out of Norway revealed that 1 hour of exercise a day can offset up to 8 hours of sitting. This amount of activity is 2x the current WHO guidelines that recommend a minimum of 150 minutes/week (30 minutes/day, 5 days/week). According to the CDC, only 21% of adults currently meet the minimum recommendations. But, you are thinking, “an hour a day?!” … Exercise doesn’t have to be burdensome and monotonous. Here are some pointers to keep in mind:

Break it up: The 60 minutes can be spread out throughout the day; bouts of 10+ minutes multiple times a day are beneficial.

Have Fun: Make the activity enjoyable, for example, go for a walk or play a game of soccer with your kids.

Keep it manageable: The exercise doesn’t have to be vigorous, moderate intensity exercise can be just as beneficial for health benefits. Just make sure and maintain an elevated heart rate during the activity. Try to maintain a HR of 50-60%HRR for moderate intensity and 60-85% HRR for vigorous intensity exercise.

Research on the negative health effects of prolonged sitting dates back to the 1950’s, but the world today has become more and more sedentary and our health is suffering as a result. Both our lack of physical activity (not meeting recommended levels of exercise) and ‘sedentary behavior’ (time spent sitting) are independently influencing our health epidemic.

The key is movement!

If you currently exercise, but find your self sitting a lot for work… make sure and take these effort to stand and walk more throughout your day (they even make sit-stand and treadmill desks. If you currently don’t exercise and spend a lot of time sitting, start to integrate in some moderated intensity bouts of exercise daily and make a conscientious effort to stand/walk more at work. Don’t SED yourself up for health problems ;-)
Kelly Bailey and Gerry Hyner engage local 4H members on careers in Public Health.

Brothers James, left, and Steve Hansen celebrate their graduation from Purdue University on Dec. 18, 2016. The Hansens are the grandsons of Purdue’s eighth president, Arthur Hansen. James Hansen graduated with a diploma from HK Athletic Training.

Grands ons of Purdue’s 8th president, Arthur Hansen are 2016 December Graduates.
In December, Purdue Athletic Training Club came together to create blankets for children staying in local hospitals during the holiday season in their second annual "Christmas Cuddles" event. The blankets were made with materials purchased by the club as well as through donations from staff and other organizations. Members of the club came together the week before final exams to assemble the no-sew blankets. Twenty-five finished blankets were delivered by students right before Christmas.

Purdue Athletic Training Club is the undergraduate Athletic Training Student Organization focused on community outreach and professional and academic development. Participants in the program are all Athletic Training or Pre-Athletic Training students within the Department of Health & Kinesiology. These students participate in other community outreach efforts such as Relay for Life and the annual holiday food drive. For more information about Purdue AT Club, visit us on Twitter @Purdue_ATClub.


A total of 23 athletic training students attended the Indiana Athletic Trainers’ Association annual meeting this fall in Muncie, IN. Students participated in educational sessions learning about myofascial decompression treatments, shoulder examination techniques, knee special test diagnostic accuracy, and current pharmacological trends. Four teams from the athletic training program competed in Quiz Bowl, a Jeopardy-style competition between all athletic training programs within Indiana.

Three students were accepted to for oral presentations at the conference, including:
- Mike Sundell, “Right Tibial Tendon Tear in a Collegiate Athlete”
- Jake Rytlewski, “Tibial Spine Avulsion Fracture in a High School Athlete”
- Devin Hall, “Cuboid Stress Fracture in a Division I Track and Cross Country Athlete”

Additionally, ten students had their case studies accepted for poster presentation, including:
- Ellen Reinhold, “Femoroacetabular Impingement and CAM lesion in a Collegiate Track and Field Athlete”
- Patrick O’Donnell, “Bilateral Labral Tear and Capsular Instability in a Football Athlete”
- Emma Alfred, “Successful Non-operative Treatment of a Significant Wrist Hyperextension Injury”
- Kara Kershner, “Thoracic Outlet Syndrome in a Collegiate Softball Athlete”
- Alexis Smith, “Thoracic Outlet Syndrome Acquired from an Unusual, Insidious-Onset Mechanism”
- Nicole DeMarco, “Wolff Parkinson White Syndrome in a Collegiate Distance Runner”
- Darie Kirschling, “Total Hip Replacement in a 39-Year-Old Female”
- Allison Hlavin, “Surgical Reconstruction of a Peroneal Tendon Subluxation”
- Lindsay Calvert, “Bilateral Athletic Pubalgia”
- Jessica Miller, “Brostrom Ligament Repair and Treatment of Osteochondritis Desicans of the Talus”