Welcome!

Welcome to the Health and Kinesiology Winter 2018 newsletter. As I write this note, the Spring semester is rolling with students taking their first round of exams which of course means loads of furious studying in the student lounge area of the Lambert lobby and many anxious faces around campus. Every semester I am impressed with the learning and research opportunities our excellent faculty provide our students and how well our students step up to the challenge.

Among the highlights in the current newsletter, you will read about our newest faculty members, an impressive group of hard working professionals dedicated to advancing our discovery, learning and engagement missions. You will learn about a new experiential learning opportunity – Exercise Is Medicine on Campus – where our students are working to increase physical activity at Purdue University. Finally, you can feel confident in our progress as evidenced by the awards our students and faculty have earned.

After reviewing each edition of our newsletter, I have a deep sense of pride in our efforts to promote “Healthy Ideas in Motion” and our work toward solving the large challenges we face together. My hope is you experience the same sense of pride because this is all possible through your generous support – thank you.

Please consider sending us a note with 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 Gymnasium and 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.

IN THIS ISSUE

- “Space Pants” Reduce Pain
- Exercise is Medicine Program
- Gaming System Helps Parkinson’s Patients
- Exercise Trends and Advice
Academic All-Big Ten Selections & Distinguished Scholar Awards

**ALL BIG 10 SELECTIONS**
Jessica DelBovo (Women’s Track and Field) (Movement and Sports Sciences)
Anna Dolce (Women’s Track and Field) (Movement and Sports Sciences)
Jenna Halderman (Women’s Track and Field) (Applied Exercise and Health)
Micaela Hazlewood (Women’s Track and Field) (Movement and Sports Sciences)
Katie Johnson (Softball) (Kinesiology)
Amy Poynter (Women’s Track and Field) (Movement and Sports Sciences)
Ashley Yarbrough (Women’s Golf) (Movement and Sports Sciences)

**BIG 10 DISTINGUISHED SCHOLAR AWARDS**
Jenna Halderman (Women’s Cross Country, Track & Field) (Applied Exercise & Health)
Reagan Lear (Women’s Cross Country, Track & Field) (Movement & Sport Sciences)
Jake Herr (Football) (Movement & Sport Sciences)
Ashley Yarbrough (Women’s Golf) (Movement & Sport Sciences)
Erika Arkans (Women’s Soccer) (Public Health)
Alex Toetz (Men’s Swimming & Diving) (Movement & Sport Sciences)
Micaela Hazelwood (Women’s Track & Field) (Movement & Sport Sciences)
Amy Poynter (Women’s Track & Field) (Movement & Sport Sciences)

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**HK Graduate Students**

**Spring 2017 Graduates:**
- Christian Floirendo, MS (Athletic Training)
- Corlis Gross, MS (Recreation and Sport Management)
- Lija Krievs, MS (Recreation and Sport Management)
- Gina Morelli, MS (Athletic Training)

**Summer 2017 Graduates:**
- Sheelagh Evans, MS (Exercise Physiology)
- Nathaniel Romine, MS (Biomechanics)
- Corey Smith, MS (Athletic Training)
- Brian Sullivan, MS (Exercise Physiology)

**December 2017 Graduates:**
- Jonathan McKeeman, MS (Biomechanics, Motor Control, Motor Development)
- Han Eol Kim, MS (Biomechanics, Motor Control, Motor Development)
Purdue has produced 23 astronauts, more than any other public institution. Now, a university professor is working with a key piece of their equipment to help people with peripheral artery disease.

According to the American Heart Association, 8.5 million Americans suffer from the disease, also known as PAD. Because of insufficient blood flow in their legs, they experience pain, fatigue and cramping while walking or climbing stairs. The pain usually subsides after a rest period but is often bad enough to prevent them from doing daily tasks.

“I have patients that have trouble going to get their mail in their mailbox,” said Bruno Roseguini, assistant professor in health and kinesiology at Purdue. “These patients, in order to avoid that pain, become very inactive. So this is a vicious cycle that leads to more impairment and more functional decline over time.”

Roseguini is studying heat therapy and its effect on PAD symptoms by using pants that circulate warm water over the wearers’ legs. The pants are made of elastic fabric and used by astronauts to regulate body temperature while in space.

Roseguini and his team recently published a study that revealed that a single session of leg heating reduces blood pressure and increases leg blood flow in patients with symptomatic PAD.

“Based on our initial findings, it is conceivable that repeated exposures to heat therapy might enhance the ability of the arteries in the legs to vasodilate” Roseguini said. “What that means is there would be more blood flow and greater oxygen delivery to calf muscles during exercise, and we anticipate this will prolong the time they can walk before they feel pain.”

Smoking, diabetes, high blood pressure and age are major risk factors for PAD, and the economic burden caused by the disease is expected to rise over the next decade as Americans age. Roseguini calls physical exercise the “gold standard” for treating PAD, even if many patients choose other routes seeking relief. While FDA-approved drugs are considered somewhat effective at lessening the pain, side effects often keep people from taking them. Outpatient surgery for a stent to be inserted into an artery, is increasingly common, but carries a risk of restenosis where relief is short-lived. The patient, without any lifestyle changes, will often return for a similar procedure within a few years.

“The patients seem to perceive heat therapy as doable, as something that they are willing to try,” Roseguini said. “Exercise is painful for these patients and leg pain is one of the main reasons for why most of these patients do not adhere to structured exercise programs. Heat therapy, on the other hand, is not painful. If anything, heat therapy might actually reduce leg pain, so the patients see that as a treatment they would potentially adhere to.”

Roseguini is leading a clinical trial studying the effectiveness of heat therapy. Research subjects who suffer from PAD undergo six weeks of treatment and are evaluated to see if walking is less painful after wearing the so-called space pants. It’s believed that heat will allow greater blood flow in the legs, allowing more oxygen to get to the wearers’ calf muscles, thereby, decreasing the discomfort.

The clinical trial is being conducted at Indiana University School of Medicine in Indianapolis. If heat therapy proves effective, Roseguini hopes the pants can be fitted with a small, battery-operated pump to allow patients to walk around while wearing them. He believes the procedure can be combined with existing treatment options in both a clinical and home setting.

Writer: Tim Doty, 765-496-2571, doty2@purdue.edu
Source: Bruno Roseguini, 865-496-1239, brosegui@purdue.edu
Note to journalists: A video is available here: https://www.youtube.com/watch?v=m5rdhuaf0E&feature=youtu.be
During the 2017 spring semester, HK joined the Exercise is Medicine movement and is now officially registered as an EIM On Campus (EIM-OC) School.

“The campus has never heard of this initiative before; so at least they might hear ‘exercise is medicine,’ maybe see us in a couple places, maybe join in some of the activities,” HK Associate Professor and Purdue EIM coordinator, Darlene Sedlock said. “And ultimately adopt a more physically active lifestyle.”

**Exercise is Medicine** was initiated in 2007 by the American Medical Association and the American College of Sports Medicine and is now coordinated by the ACSM to urge healthcare providers to assess a patient’s physical activity level at every visit and determine if they meet national guidelines. Patients are given fitness counseling or “prescriptions” to exercise, often instead of medication.

Sedlock stated that an increasing number of students are showing signs of being at-risk for future health issues.

“These things just don’t happen overnight, you just don’t become glucose intolerant overnight, you just don’t become obese overnight, you don’t just become hypertensive overnight. They don’t feel like there’s anything wrong.”

According to the Exercise is Medicine initiative almost one-third of the world population is categorized as physically inactive. That inactivity is responsible for an estimated five million deaths, a number that equals 9 percent of total global premature mortality.

You can follow Purdue Exercise is Medicine activities through Facebook at: www.facebook.com/PurdueEIM or on Twitter @PurdueEIM.

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“Exercise is Medicine” Program Initiated on Campus Through HK Department

Group photo of first EIM campus walk in spring of 2017.

“The campus has never heard of this initiative before; so at least they might hear ‘exercise is medicine,’ maybe see us in a couple places, maybe join in some of the activities, and ultimately adopt a more physically active lifestyle.”

-Darlene Sedlock, Purdue EIM Coordinator
HHS Awards Program

Claire Albert, 2017 Outstanding Senior in Health and Kinesiology, shown with HK Professor Emeritus Larry Leverenz, HK Lead Academic Advisor, Nancy Kester, and HK Department Head, Tim Gavin. Claire started in the IUPUI Physical Therapy Program and began her Doctor of Physical Therapy work there in the fall of 2017.

T. Pepper Burruss, pictured with retired Athletic Training professor Denny Miller, received a Health and Human Sciences Distinguished Alumni Award spring of 2107. Pepper is a 1976 HK graduate and is currently the director of Sports Medicine Administration for the Green Bay Packers.

Health and Kinesiology’s
Laura Schwab Reese
was recently accepted as a Fellow in the International Society for Research on Aggression
Dr. Ambike’s work on Arm Fatigue in Purdue Research News

Study researches ‘gorilla arm’ fatigue in mid-air computer usage.

Dr. Ambike, with Dr. Karthik Ramani and Sijin Jang from the department of Mechanical Engineering and along with Dr. Wolfgang Stuerliger from Simon Fraser University published a paper on measuring arm fatigue using inexpensive motion capture technology. The paper will be presented in the prestigious ACM SIGCHI conference – a special-interest group on Human-Computer Interaction on May 9, 2017, at Boulder, Colorado.

HK’s Svea Nelson receives Ruth Abernathy Award

HK graduate, Svea Nelson pictured here with SHAPE President-elect Fran Cleland, at the 2017 ceremony where Svea was honored to receive one of three (in the nation) Ruth Abernathy Presidential Scholarships.

HK’s SCOTT LAWRANCE WINS OUTSTANDING MANUSCRIPT FOR ADVANCING EDUCATIONAL PRACTICE AWARD

2016 Athletic Training Education Journal

First Place: Scott E. Lawrance, DHS, ATC, MSPT; Craig A. Voll, PhD, ATC, PT; Jessica Emlich Jochum, PhD, ATC

Dr. Scott Lawrance working with athletic training students.
New Study Abroad Opportunities For HK Students!

The Purdue University Department of Health and Kinesiology hosted representatives from the Ritsumeikan University College of Sport and Health Science (Shiga, Japan) on September 4-5, 2017. Discussions during the visit centered around opportunities for undergraduate students at Ritsumeikan University to pursue graduate studies at Purdue University within the Entry-Level Masters Program in Athletic Training that is currently being developed, and opportunities for Purdue University students to participate in Athletic Training and Consumer Science Study Abroad courses at Ritsumeikan University.

“The Ritsumeikan University and Purdue partnership for an exchange program is a win-win for students!”

-Tim Gavin
Health & Kinesiology
Department Head
Dr. Tim Gavin
Elected to the
Board of Directors for the
American Kinesiology
Association

The American Kinesiology Association promotes and enhances kinesiology as a unified field of study and advances its many applications. AKA does this by advocating for kinesiology at national and international levels as well as by supporting its member departments by providing resource materials and leadership and educational opportunities for university administrators in kinesiology.

HK’S SCOTT LAWRANCE
Elected Chair for the
NATA State Association
Advisory Committee

Health & Kinesiology Welcomes New Faculty

Introducing JENNIFER POPP

Jennifer Popp joined Purdue HK as a clinical assistant professor in the fall of 2017. Jennifer earned a bachelor’s degree from Western Illinois University, a master’s degree from the University of Wisconsin-La Crosse, and her doctoral degree from Ball State University. She is licensed as an athletic trainer, and has been educating athletic training students for over 20 years, where she is passionate about preparing students to be competent practitioners. Jennifer strives to improve emergency management skills in athletic training, and has conducted several research studies in this area. Jennifer enjoys outdoor activities (particularly hiking and water sports) and watching her kids play sports. She is excited to join the HK department this fall!

Introducing JORGE BANDA

Jorge Banda joined the Purdue HK Department as an assistant professor in the fall of 2017. Jorge earned a BS in Kinesiology and an MS in Exercise Science from the University of Houston, a PhD in Exercise Science from the University of South Carolina, and he completed his postdoctoral training at Stanford University. Jorge’s research merges the fields of exercise science, public health, and social psychology to develop creative solutions to prevent and treat childhood obesity. He originally studied music education in college, and enjoys reading, visiting museums, and attending the opera, symphony, and Purdue sporting events.

Introducing LAURA SCHWAB REESE

Dr. Schwab Reese is an assistant professor in the Department of Health & Kinesiology and the Graduate Public Health program. Prior to coming to Purdue, she was the Berger Fellow at the Kempe Center for the Prevention and Treatment of Child Abuse and Neglect at the University of Colorado, Anschutz Medical Campus. She has a PhD in Community & Behavioral Health from the College of Public Health at the University of Iowa, a Master’s in community counseling, and a Bachelor’s in psychology. Her general research interests focus on injury and violence prevention, with an emphasis on preventing family violence and improving family functioning.
A pair of Purdue University professors are using the popular Nintendo Wii gaming system to help people with Parkinson’s disease. Jessica Huber and Jeff Haddad from the College of Health and Human Sciences are studying how playing specially created games can improve a patient’s movement, speech and overall quality of life.

By having study participants stand on a balance board and move a cursor to a specific target on a monitor, the researchers can study how brain activity and body movement are connected, which often comes into play in seemingly simple everyday tasks like walking and talking, which can be difficult for people with Parkinson’s.

“We’re looking at being able to do things in their house that may be challenging, like put away groceries when you have to stand on your toes and reach for cabinets, or to cook and communicate at the same time” said Haddad, an associate professor in the Department of Health and Kinesiology.

“All these things that people, when they’re younger, take for granted that get more difficult to perform as they get older, and even more so if they have some sort of neuromuscular disease.”

Haddad says a pilot study done in collaboration with researchers at Purdue, Indiana University and the University of Calgary, and using Parkinson’s patients along with otherwise healthy older adults, revealed that the games, when utilized for a prescribed period of time, tended to show more positive outcomes in gait and balance than traditional Parkinson’s treatments.

Huber, a professor of speech, language and hearing sciences, believes game play is also having positive impacts on participants speech patterns.

“As speakers, we typically take pauses at set locations - a major thought, a minor thought, not really in the middle of a thought,” Huber said. “After therapy with this, their pauses were more typically placed. They didn’t pause as often in unexpected locations.”

While the exact reasoning for these positive outcomes is not known, researchers plan to expand their research with a full, randomized study. Huber says current Medicare rules make it difficult for Parkinson’s patients to get both physical and verbal therapies covered, so the pair have an eventual goal of making the technology home-based.

“The therapist can check in on the patient wirelessly and they can see if they’re doing their exercises, they can see how they’re doing, they can call them back if they seem to be falling behind,” Huber said. “I also think, when you have a population with a mobility impairment, treating them in the home is critical.”

While accessibility is a positive outcome that is key, so is enjoyment. With participants doing three sessions a week for eight weeks, Haddad says researchers must make things fun for the men and women taking part.

“We’ve learned some things that we’ll try to implement to make it more exciting,” Haddad said. “More games, and eventually being home-based, will probably make this more enjoyable than going to a physical therapy clinic, just not as fun as going and partying with their friends.”
Health & Kinesiology Says Goodbye to our Retirees

Thank You LARRY LEVERENZ for 26 years of commitment to Purdue University, Athletics, and the AT students

Thank You Dennis Miller for your years of commitment to Purdue University, Athletics, and the AT students
‘Returning to play,’ HIIT and Live-streamed classes: Purdue expert available to talk top fitness trends for 2018

It’s high-tech meets old school as a Purdue University fitness expert looks at some of the top fitness trends for the new year, which include cryotherapy, wearable technology and fitness classes that feature game play as exercise.

Cassandra Ledman, clinical assistant professor in the Department of Health and Kinesiology, says, “This list shows where we can expect people to be spending their time and money this year. While not everyone enjoys the same thing, trying one of these options can provide a needed change of pace and added motivation!”

Ledman says the top fitness trend for 2018 is high intensity interval training. Defined as exercise focused around short bursts of intense effort with short periods of rest/active recovery, she says it is efficient and has shown staying power. New versions of HIIT have also developed, such as, HIIT Yoga.

Wearable technology, such as smart watches, phones, bands, and even sunglasses, will remain hot in the new year, Ledman says. She believes the technology offers a great from of education, motivation and accountability to the wearer.

Among other high-tech trends for 2018 are live-streamed classes, which offer a wealth of options for the person who is hard pressed to find time to get to a gym, and an increasing focus on recovery. From group classes for myofascial release and flexibility to advanced spa-like treatments of Cryotherapy and infrared sauna, many are increasing their focus on enhancing full body recovery and healing between workout sessions, she says.

“Rest and recovery are a part of the exercise program. Pushing yourself to exhaustion will not only increase risk of injury, but will also lead to diminished health, diminished performance gains and burnout”

As interest in personal training declines, Ledman says group training - with five or more people focused on various outcomes/goals or generalized fitness - is increasing in popularity. Group training is more cost effective than personal training, but still enables a more personal coach-like environment with social support from others.

Classes focused on getting people fit while having fun and ‘playing games’ are growing in popularity, as well, Ledman says.

“We all know exercise isn’t everyone’s idea of ‘fun’, but try to integrate things you enjoy into your exercise program; there are so many options,” she says. “Don’t adopt an exercise program you hate. Find something you like, or at least reasons you like it, such as, the endorphin rush when you finish, the sense of accomplishment when completing a personal best, how your jeans fit better, etc. Simply find your motivator!”

Ledman also says body weight training, which is free and utilizes retro-style exercise like pushups, planks and squats, continues to grow in popularity.

She is available to talk about and demonstrate these trends, as well as offer advice on beginning a new workout program and exercising in cold weather.

Writer: Tim Doty, 765-496-2571, doty2@purdue.edu

Source: Cassandra Ledman, 765-494-3159, cledman@purdue.edu


It is with heavy hearts that we announce the passing of Dr. Ray Anne Shrader on December 25th, 2017.

Ray Anne Shrader, PhD, began her career at Purdue University in 1959. In addition to the responsibilities of a busy faculty member, Dr. Shrader provided leadership in many ways: developing and supervising the undergraduate curriculum, serving as an academic advisor, faculty fellow, chair for various university committees, and as a member of the College of Liberal Arts Senate in several different capacities. Dr. Shrader helped develop the movement and sports science curriculum – the first undergraduate discipline-centered major in the nation. She served as the Chair of the Curricular Vision Committee which developed the major programs for merging the Men’s PE Department and Women’s PE Departments which at the time was a major undertaking.

Dr. Shrader and her long-time colleague, Dr. Jane Maver, conducted the innovative Developmental Movement Education activity program for preschool children for 25 years. Drs. Maver and Shrader served as voluntary coaches for women’s sport teams and were instrumental in paving the way for Women’s Intercollegiate Athletics at Purdue. As gifted teachers and supportive mentors, they were the embodiment of excellent physical educators. Their mentorship was so well respected that one of their former undergraduate students, Dr. Joy Greenlee, endowed a scholarship in their honor in 2007 to continue their legacy of excellence.

Dr. Shrader retired from Purdue in 1993 and was named Professor Emerita. She has remained connected to the University and to the Department of Health & Kinesiology through providing for an undergraduate travel scholarship and attending awards ceremonies and department events. Her admonition to students was “Be the best you can be in a noble profession. Always attend to your students’ needs” and is testament to her personal commitment and professionalism. By her involvement, leadership, and commitment, she gave her students the one thing every student needs most, a good example to follow.

Health and Kinesiology’s Virginia Zinsmeister, PhD is Awarded the Prestigious Honorary Member of the Indiana Athletic Trainers’ Association Award
Congratulations to HK’s Public Health Student

Victoria Symonds & Emily Sagstetter

Nominated for Purdue Mortar Board Leadership Conference!

Kaylah Hampton & Katie Johnson

Named NATIONAL FASTPITCH COACHES ASSOCIATION ALL-AMERICAN SCHOLARS ATHLETES

Purdue Hall of Fame Class of 2018 inductee

Stephanie Harpenau

set Purdue Volleyball career records for hitting percentage, block assists and total blocks. She owns season records for hitting percentage and block assists.