Kinesiology Today

AKA American Kinesiology Association

Fall Issue 2017 Volume 10, No. 4 www.americankinesiology.org

Table of Contents

Grand Opening Human Clinical Research Facility at Texas A&M

By Penny McCullagh, Ph.D., KT Editor

In April of 2017, Texas A&M University opened the Human Clinical Research Facility (HCRF). This is a new 23,000 square foot biomedical research facility developed to provide a centralized facility for clinical researchers to conduct human clinical research trials at Texas A&M University as well as provide services to the community. A description of the facility is on their web site at http://hcrf.tamu.edu/.

Provided by Texas A&M.

The HCRF houses two primary research groups from the Department of Health & Kinesiology in the College of Education and Human Development*. The Department is the largest department at Texas A & M serving nearly 4000 majors in addition to offering health, fitness and physical activity classes to over 25,000 students. The Exercise and Sport Nutrition Laboratory (ESNL) and the Center for Translational Research in Aging and Longevity (CTRAL) comprise the heart of the unit. The ESNL developed in 1997 under the direction of Richard Kreider, Ph.D., is dedicated to study the role of exercise and nutrition on health, disease, rehabilitation and performance. The CTRAL developed in 2006 under the direction of Nicolaas E Deutz,

Continue on Page 2


Richard Kreider

MD, Ph.D., and Marielle P Engelen, Ph.D. is dedicated to the study of translational research on nutrition, exercise, and metabolism in relation to aging and the common diseases of our aging population.

Dr. Richard Kreider is the Executive Director of the HCRF. Dr. Kreider served as Head of the Department of Health and Kinesiology for 9 years as well as the Director of the Exercise & Sport Nutrition Laboratory. Dr. Kreider has received over $22 million in grants to support his research. He has been active in many professional societies and his home department is a member of the American Kinesiology Association. He has served many roles in this organization including a member of the Board of Directors. In recognition of his scholarship and leadership, Dr. Kreider has many professional honors and was recently inducted into the National Academy of Kinesiology as Fellow #568.

I wanted to learn a little more about the conception for the facility as well as some of funding sources so I chatted with Dr. Kreider, the Executive Director of the HCRF. Here are some things I learned from our conversation:

As a land grant college, a primary mission of the university is to give back to the state. As such, the goal is to translate basic research for the benefit of the community. Two primary goals are to conduct and assist in conducting research. A second purpose is to provide host of services for a fee including direct services to clients as well as assisting with IRBs, collecting and analyzing data on large scale projects and dissemination of findings.

- Previous to the new construction, the two labs mentioned above were housed in rental space in a research park. Texas A & M generates considerable funding in agriculture and engineering, but only a small portion of funding for human research. This facility will help host research from a wide array of disciplines both on and off campus directed at human research.
- I discovered that it was a nine-year process to complete the facility. Initially, the building was submitted as a C06 facility grant proposal to the NIH. This was followed by white papers recommending university research focused on obesity/metabolic disease, and aging. These efforts led to recruiting a signature hire Dr. Mick Deutz and his team to develop the Center for Translational Aging and Longevity Research (CTRAL). Due to interest in collaborating with Dr. Kreider and Dr. Deutz on this type of research, they submitted a 3 million dollar expansion request. This was well received but the university decided to build its own facility rather than further renovating rented space. After that, things started to fall into place. The Health and Kinesiology department and the College provided about $4.5 million in funding and the university contributed another $9.5 million.
- When I asked if other facilities had served as a model, Dr. Kreider mentioned the Pennington Biomedical Research Center that opened in 1988. “Doc” Pennington and his wife Irene donated $125 million to Louisiana State University to build the best nutritional research facility in the US. Doc was an optometrist but bought land that later yielded oil.

Continue on Page 3

- My final questions concerned markers of success for the new facility. He remarked that external funding, research productivity and the cooperation and support of PIs from both within and outside the university are critical for the success of the unit. He also noted that the facility would serve as a great recruiting tool for new faculty to the university. An examination of the web site indicates they may be well on their way. There are over 30 affiliates connected to the unit and over 50 sponsors.

Congratulations Dr. Kreider, the Department of Health and Kinesiology, the College of Health and Human Development and Texas A & M for your support of this innovative unit. I hope we can follow up in a couple of years and report on your success!

*The Department is a member of the American Kinesiology Association
See this link for video of Grand Opening.

https://www.youtube.com/watch?v=pFZPRjRyuuY&feature=youtu.be


Provided by Texas A&M.


Provided by Texas A&M.


Provided by Texas A&M.


Provided by Texas A&M.

Is Finger Size Related to Athletic Performance?

By Penny McCullagh, Ph.D. KT Editor

If you asked Grant Tomkinson, a Professor of Kinesiology and Public Health Education at the University of North Dakota*, this question, the answer would be YES. Dr. Tomkinson received his Ph.D. in Human Movement from the University of South Australia in 2004 and moved to the University of North Dakota in 2015. He along with his son, Jordan, a high school senior, published an article in October 2017 that examined the ratio of the lengths of the 2nd and 4th digits of 57 adolescent boys and found that this digit ratio "was very likely a moderate negative correlate of handgrip strength, even after adjustment for age and body size".

Tomkinson, along with a graduate student at the University of North Dakota also wrote an article that appeared in The Conversation. I had not heard of this publication before but found that it was launched in Australia in 2011 and has since expanded to the UK, the US, Africa and France. It reports a monthly audience of up to 5 million users and reaches 35 million people. Needless to say, that is considerably more than KT. The original idea was to host stories sourced from the academic and research community with the purpose of getting research information to the public.

In their article "Finger size does matter… in sports" they explain how to calculate digit ratio. You measure the index finger and divide it by the length of the ring finger and you end up with the digit ratio. For males the ring finger is typically longer than the index finger, meaning they have lower digit ratios than females. In females the ring and index fingers are about the same length. The authors suggest that the digit ratio is determined in the fetus and is influenced by testosterone levels. A quick Google search indicates that digit ratios have been linked to a wide range of outcomes and behaviors including autism, myocardial infarction, breast cancer, size of vocabulary, and even social behaviors such as inclination to make eye contact. In addition, the digit ratio has been related to visual-spatial abilities, cognitive abilities and mental toughness, all skills necessary in high-level athletes.

Numerous articles are cited that show a meaningful relationship between digit ratio and success in soccer, American football, basketball, fencing, handball, rowing and a host of other sports (see links in the article). The authors suggest that "digit ratio itself does not confer a sporting advantage" so they are not inferring a cause and effect relationship. However, they do suggest that the ratio is related to fetal testosterone which can have a long-term influence on the structure and function of the brain, heart, muscles and behavior.

Grant Tomkinson

I did have a couple of questions for Dr. Tomkinson. (photo of Tomkinson)

What are some of the variables that can influence prenatal testosterone levels?

- He responded that diet, lifestyle (stress levels), exposure to drugs and chemicals are some of the many factors.

You are studying a variable that you are not manipulating so you do not have easy inferences about cause and effect. You say in your article "digit ratio does

Continue on Page 5

not confer a sporting advantage" but if individuals read your article and are not familiar with the scientific method is there a concern that they might try to manipulate testosterone levels?

- The digit ratio itself does not confer a functional advantage — it's hard to imagine that a slightly longer ring finger would help you grip an object better, be more aerodynamic, or help in any meaningful way. But it's a biomarker that points to something that might help your sporting chances — prenatal testosterone. Unfortunately, the digit ratio is set before birth and is developmentally stable, and is not favorably related to adolescent/adult levels of testosterone.

Tomkinson, J.M., & Tomkinson, G.R. (2017). Digit ratio (2D:4D) and muscular strength in adolescent boys. Early Human Development, 113, 7-9.

Online interactive article in **The Conversation** written by **Dr. Grant Tomkinson** and KPHE Graduate Student Makailah Dyer. https://theconversation.com/finger-size-does-matter-in-sports-82876

*The Department of Kinesiology and Public Health Education at the University of North Dakota is a member of the American Kinesiology Association

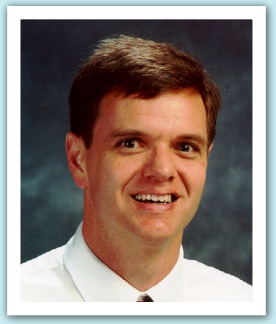
Congratulations to the 2017 Distinguished Leadership Award Winners

Bachelor's Degree Granting Department Award
Dr. Terry Rizzo, California State University, San Bernardino

Master's Degree Granting Department Award
Dr. Duane Knudson, Texas State University

Doctoral Degree Granting Department Award
Dr. David Perrin, University of Utah


Terry Rizzo


Duane Knudson


David Perrin

President's Column

AKA in the Mile High City

By Thomas Templin, AKA President

Tom Templin

On January 25th to January 27th, the American Kinesiology Association will conduct its 11th annual leadership workshop in Denver, Colorado at the Marriott Denver Airport at Gateway Park. The theme of the workshop is Promoting Quality Undergraduate Programs in Kinesiology. Special thanks goes to Kim Graber, Jason Carter, Lanier Dornier, and Dan Schmidt for serving on the program committee with me for this special event. Thanks, too, to our Future Directions committee for developing the themes for our workshops from year to year.

Pre-workshops – January 25 afternoon and January 26 morning

After the Thursday morning Executive Board meeting, there will be two pre-workshops on the afternoon of the 25th and on the morning of the 26th prior to the start of the main conference in the afternoon. Attendees will decide upon attendance at one of two concurrent sessions.

One pre-workshop, developed by John Bartholomew from the University of Texas-Austin and Jason Carter from Michigan Technological University, will address personnel issues in Kinesiology. The purpose of the session will be to examine issues related to dealing with difficult faculty and managing faculty and staff performance challenges. Along with other presenters, Shari Sanders, former Associate Vice President for Inclusion and Equity and the Title IX coordinator at UT Austin and now with the National Center for Women & Information Technology will share her insights on working with difficult faculty during the opening interactive session. The Friday session will focus on faculty and staff performance issues through the use of case studies led by an expert panel.

The other workshop will address internships in Kinesiology. Rafael Bahamonde and Mark Urtel, will lead the way here as panels and participants examine a variety of topics and cases related to the value, development, conduct and assessment of the internships. Lead speakers (TBD) will open sessions on both Thursday afternoon and Friday morning. After the Thursday lead speaker presentation, attendees will break out into "ignite sessions" (how to get started, logistics, and community partner building) and themed round table discussions by area of undergraduate study. On Friday morning, the session will open with a lead speaker who will address assessment of internships followed by an "ignite session" that will examine the nuts and bolts of assessing internships followed again by themed round tables by various areas of undergraduate study.

Main Workshop – January 26 afternoon and January 27 morning and afternoon

The main program will begin on the afternoon of the 26th. Through funding from Caduceus Publishing, the program will have various keynote speakers who will deliver talks related to enhancing undergraduate education. Ryan Jenkins, owner and founder of Next Generation, will present a dynamic speech on millennial learn-

Continue on Page 7

ing – that is, how do we best approach the teaching – learning process with the generation of students with whom we now interact. For over five years, Ryan has helped organizations better lead, engage, and market to the emerging generations, the Millennials and Generation Z (the post-millennial generation). He is the author of the *Millennial Manuel* that will be available for purchase at the meeting. We will have a drawing for 25 free copies of the book for attendees.

Other keynote presenters are:

- Melissa Gross and Peter Bodary, the University of Michigan – Academic Innovation in Teaching. The speakers will share their experiences with blended and gameful learning pedagogies with undergraduates.
- Wotjek Chadzko Zajko, University of Illinois, Core Curriculum in Kinesiology. Wotjek will address the future of Kinesiology curricula – challenges and prospects for success.
- James Morrow, University of North Texas, Workshop Summary. At the conclusion of the workshop, Jim will provide his review of the program and present his perspectives on enhancing undergraduate programs in the future.

In addition to these exciting speakers, the program will have panel discussions, podium speeches, roundtable presentations, and poster presentations that address academic innovation, curriculum, service learning, engaging undergraduates in research, and a variety of other topics related to undergraduate education. We anticipate nearly 50 conference presenters and over a one hundred conference attendees. The program committee and our pre-workshop leaders have develop wonderful sessions where participants can expect a great deal of interaction with speakers and amongst conference attendees.

Importantly, we will be honoring three individuals at closing workshop banquet on Saturday evening after a reception. These leaders will be recognized for their significant contributions to the field and will receive the 2017 AKA Distinguished Leadership Awards:

Bachelor's Degree Granting Department Award
Dr. Terry Rizzo, California State University, San Bernardino

Master's Degree Granting Department Award
Dr. Duane Knudson, Texas State University

Doctoral Degree Granting Department Award
Dr. David Perrin, University of Utah

Please note, that we will have a very special reception on Friday evening that will provide participants an opportunity to network and wind down from the day's events.

We are very confident that this meeting will serve everyone well. On behalf of the AKA Executive Committee and Board, I hope to see you and your colleagues in the Mile High City! Until then, all the best for the remainder of the term.

Do You Have the Guts? Researchers Explore Athlete's Microbiome to Develop Performance Edge

By Patrick Wade. KT Staff Writer

We wear the same shoes as our favorite athletes, use the same equipment and don the same jerseys – so why not the same bacteria?

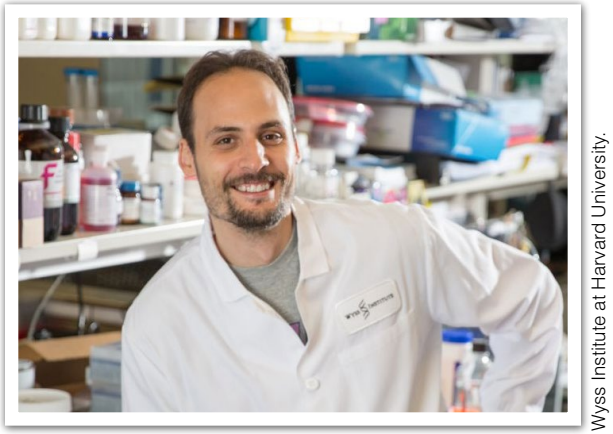
That's exactly what researchers out of the Wyss Institute for Biologically Inspired Engineering out of Harvard have asked, and they are getting ready to commercialize a probiotic based on the microbiome of elite athletes which they say could give amateurs a bit of an edge. Trillions of bacteria live within all of our bodies. These bacteria – particularly those in the gut – affect all of our core functions like the immune system, digestion and defending against harmful bacteria. Just about everything the human body does is affected, and maintaining a healthy microbiome is key to maintaining a healthy lifestyle.

"We're essentially more bacteria than we are human," Dr. Jonathan Scheiman told others at the American Chemical Society National Meeting and Exposition in April. Many probiotic supplements are on the market today promising things like better digestive health, reproductive health, weight loss, mental sharpness and general wellness.

Now, researchers are looking to start up what Scheiman describes as "the first-ever sports biotech company," and they are taking a novel approach to achieving that goal by looking at what's living in the guts of elite athletes. Scheiman said in an interview with Kinesiology Today that the question they broached was "what if we sort of used next-generation sequencing to understand what makes elite athletes unique, and then extract that information to help them and others?"

Scheiman, who holds a Ph.D. in molecular biology and does his research at the Wyss Institute at Harvard, is no stranger to the world of sports. He won a Big East championship and a National Invitation Tournament title while playing basketball at St. John's University. He tried out for professional teams in Europe before returning to the United States to join the research community.

"I wanted to play in the NBA," Scheiman said. "I didn't make it. My backup was a Ph.D. in molecular biology." That's not a bad backup, it turns out, because it put Scheiman in a unique position to envision



Wyss Institute at Harvard University.

Dr. Jonathan Scheiman

a biological approach to improving athletic performance.

"Halfway through my postdoc, I kind of wanted to go back to my roots in athletics and bridge together the sports and science communities," Scheiman said. He and Dr. George Church, a founding member of the Wyss Institute, suggested that the bacteria found in the gut of elite athletes could be one of the contributing factors which give them a performance edge. Being in Boston, the team found themselves in a perfect location to test that theory as the 2015 Boston Marathon approached. The researchers enlisted 20 elite runners and

Continue on Page 9

collected fecal samples from them daily for one week before and one week after the marathon. Scheiman said that was a 5-hour daily trek through the city to pick up their stool samples. "I always like to say I got my hands dirty," Scheiman said.

In comparing the pre-race and post-race samples from elite athletes, the researchers found that one particular bacterium "dramatically increased" immediately following the marathon in all of the runners. This was exciting, Scheiman said, because this particular bug breaks down lactic acid – the substance in the body which builds up during a workout and causes fatigue and soreness.

The researchers went on to find this phenomenon in all athletes, not just the marathoners. Among others, Scheiman's team looked at the microbiome of rowers training for the Olympics. "That seems to be something we find in all the athletes we studied regardless of sport," Scheiman said. "It seems to be an across the board phenomenon."

Wyss Institute at Harvard University.

The next step was to isolate and purify that bacterium so it could be packaged as a probiotic dietary supplement intend to reduce fatigue and boost energy following strenuous activity. In addition to promoting general wellness, he hopes the supplement will clear blood lactate more quickly after exercise and get athletes back to performing.

Part of the goal of the work of the Wyss Institute is to advance biotechnology and develop real-world products that can have an effect on society, so the researchers have developed a start-up, Fitbiomics, which intends to market that product commercially. The group is working through the de-risking phase now.

Fitbiomics bioengineers will be looking to recruit 100 elite athletics from all over the world to donate their microbiome to be sequenced and offered as a probiotic. These athletics are very meticulous about their craft and their diets, Scheiman said, and researchers believe the bacteria in their guts could be one of the keys to their performance edge. The probiotic would be designed to help everyone, but primarily targeted to non-elite athletes.

The athletes whom researchers have approached so far to be potential donors of their microbiomes seem very excited about what the team is doing, Scheiman said. And aside from that, there could be an opportunity for those athletes to popularize the science. "I think there's an opportunity to turn some of our professional athletes into scientific ambassadors," Scheiman said. KT

Dr. Jonathan Scheiman, seen here in his lab at the Wyss Institute for Biologically Inspired Engineering at Harvard University, is part of a team preparing to launch what he calls "the first-ever sports biotech company" to focus on improving athletic performance with probiotics. (Photo used with permission from the Wyss Institute for Biologically Inspired Engineering).

American Chemical Society. (2017, August 20). No guts no glory: Harvesting the microbiome of athletes. ScienceDaily. Retrieved Sept. 4, 2017 from www.sciencedaily.com/releases/2017/08/170820075017.htm

McNally, T. (2017, April 03). Would You Drink A Probiotic With The Gut Bacteria Of Elite Athletes? The Huffington Post. Retrieved September 30, 2017, from http://www.huffingtonpost.com/entry/would-you-drink-a-probiotic-with-the-gut-bacteria-of_us_58e094f4e4b0ca889ba1a6d2

No guts no glory: Harvesting the microbiome of elite athletes (press conference). (2017, August 21). Retrieved Sept. 28, 2017, from https://www.youtube.com/watch?v=Kd1Pwo_eAq4

Are You a Kinesiologist?

By Penny McCullagh, Ph.D. KT Editor

Well if you are reading this publication, you probably have some connection to Kinesiology. Maybe you are a student, or a faculty member in the field or maybe you are a parent of a kinesiology major and want to learn more about the field. But are you a kinesiologist?

If you live in Ontario, Canada, you must be registered with the College of Kinesiologists of Ontario to practice as a kinesiologist. Only member of the College can use the title "kinesiologist" or claim they are a kinesiologist.

To be a member of the Ontario Kinesiology Association (OKA), (www.oka.on.ca) which is an affiliate member of AKA, you must also be a member of the College of Kinesiologists (CKO) of Ontario http://www.coko.ca. The College is not a school or university and does not offer courses. It receives it regulatory authority from the Kinesiology Act of 2007 and the Regulated Health Professions Act of 1991. Yes those are official government laws. The College is governed by a Council (similar to a Board of Directors) made up of members who are kinesiologists elected by their peers, and members of the public who are appointed by the Ontario government. The Council sets policy and standards to make sure that it protects the public! Ontario has similar Colleges to govern other health care providers. For example, the College of Physiotherapists (this is physical therapy) sets the governing rules for whom is qualified to practice physical therapy.

According to the web site, the College of Kinesiologists of Ontario achieves its mandate by:

- Setting requirements for entry to the profession so that only qualified individuals can practice.
- Maintaining on its website a list of individuals qualified to practice kinesiology.
- Developing rules and guidelines for kinesiologists' practice and conduct, including a code of ethics.
- Investigating complaints about kinesiologists' practice and disciplining when necessary.
- Requiring kinesiologists to participate in a quality assurance program to ensure they maintain current knowledge and skills.

You must have a Bachelor's degree that is at least four years in length in Kinesiology or a related field, and pass a written exam that is offered twice per year to register with CKO.

Because the idea being a licensed Kinesiologist was new to me, I talked to a number of individuals* to gain a better understanding. Kinesiology became a regulated profession in Ontario in 2013 after many long years of work by a host of professionals. A profession cannot just apply to become regulated – there must be a public need. Prior to that some professional organizations offered and still do offer certifications that fall within the scope of kinesiology practice. For example, similar to American College of Sports Medicine in the US, the Canadian Society for Exercise Physiology (CSEP) offers a number of courses that certify practitioners in administering elements of exercise programs. The CSEP professional organization is composed of volunteers and professionals in the field. They suggest that their certifications are top notch because "they are born out of the most extensive scientific research, and extensively peer

Continue on Page 11

reviewed by top researchers in the field"

The College of Kinesiologists of Ontario provides an excellent table to demonstrate the differences between regulators and professional associations. The OKA is an example of a professional organization. Since Kinesiology as a regulated profession is relatively new, they suggest there still may be some misunderstandings. The following table was generated from information posted on the CKO web site.

	College of Kinesiologists of Ontario	Professional Associations
Purpose	• To protect the public • Created by legislation • Receives authority from the Kinesiology Act, 2007 and the Regulated Health Professions Act, 1991	• To advocate on behalf of its members and promote the profession of kinesiology
How it's run	• Governed by a Council, similar to a board of directors • Council is composed of kinesiologists elected by peers and members of the public appointed by the Ontario government • Accountable to the Ontario government, the public and members	• Governed by a board of directors who are elected by members • Accountable to members of the association and governed by articles of incorporation
Membership	• Mandatory • Only individuals who meet entry-to-practice requirements and who continue to meet standards are permitted to practice	• Voluntary
What they do?	• Sets requirements for entry to the profession • Maintains a list of individuals eligible to practice kinesiology • Develops standards of practice • Receives and investigates complaints about kinesiologists' practice and administers appropriate disciplinary action when necessary • Requires kinesiologists to participate in continuing professional development	• Advocates with policy makers • Markets and promotes the profession • Provides continuing professional development opportunities • Represents the members' interests by monitoring developments which may impact scope of practice, employment opportunities and enhancing relationships with related professions

Continue on Page 12

The bottom line is that organizations like CKO exist to protect the public. If you wish to call yourself a Kinesiologist in Ontario, you must be registered with CKO.

British Columbia is also hoping to move to a regulated system for kinesiologists, but there is still a long road ahead to get governmental regulation. The British Columbia Kinesiology Association (BCKA) is also an affiliate member of AKA. One of the issues for both provinces is ensuring adequate training for kinesiology graduates so they are able to deliver physical interventions appropriate to their individual scope of practice. Furthermore, the scope of practice for Ontario Kinesiologists is broad including provision of interventions for individuals with chronic disease, conducting performance testing and training for elite athletes, administering exercise prescription, rehabilitation, conducting ergonomic assessments, and providing health behavior change interventions. Many universities offer degrees in Kinesiology but they don't necessarily offer numerous applied programs that can train individuals for many of the above tasks. The CKO does publish on its' web site exam passage rates by university (see link below) and some universities have added extension programs to train students in the applied skills. For example, the OKA publishes on its web site a number of webinars for individuals to extend their knowledge in applied areas. A recent study by Wayne and colleagues (2017) published in the free-access Translational Journal of the American College of Sports Medicine did a survey of Registered Kinesiologists (R. Kin) with a purpose to identify research topics that would be important for practitioners. The goal is to share these with faculty at universities who might be able to provide evidence-based answers that can then be translated for practical application. The associations are also trying to work with universities to modify curriculum but at major universities where basic research is valued, it is sometimes difficult to get a good match.

So do you think you can call yourself a Kinesiologist? Well you may need to be careful. In British Columbia some folks working at gyms claimed to be kinesiologists but had no formal training in the field. They were taken to task but without regulatory statutes it is difficult to stop such practices. Other provinces in Canada are at different stages of moving towards this model. Should we in the US be trying to get such regulation? How can we insure that individuals delivering services are qualified? How do we get the public to understand that training is necessary?
I had conversations with*:

Elizabeth Chapman, B.Sc. Kinesiology and R. Kin. Former President of Ontario Kinesiology Association. Health and Wellness Specialist at Toyota Motor Manufacturing, Canada

Stuart Moulton, Executive Director, Ontario Kinesiology Association

Ryan Pestana, Communications Officer, College of Kinesiologists of Ontario.

Daryl Reynolds, B.S., Executive Director, British Columbia Kinesiology Association

Kathryn E. Sinden R.Kin., PhD. Assistant Professor, Lakehead University. Past Board member of the Ontario Kinesiology Association and Canadian Kinesiology Alliance.

Wayne, N., Ataman, R., Fischer, S., Smith, L.;,Lariviere, C., Thomas, S., Sutherland, C., Srbely, J., Santa M. & Daniel, L. (2017). Developing a Research Agenda for the Profession of Kinesiology: A modified Delphi Study. Translational Journal of the American College of Sport Medicine, 2(10), May 15, 51-56.

http://journals.lww.com/acsm-tj/pages/results.aspx?txtkeywords=Wayne

http://www.coko.ca/application/files/8114/9580/2543/Examination_Results_by_School-_Website.pdf

Continue on Page 15

Get a Racquet – Extend Your Life

By Patrick Wade, KT Staff Writier

It is no secret that engaging in physical activity has health benefits, but a team of researchers is seeking to determine whether specific sports disciplines have a greater impact than others. And one of the key questions was whether physical activity and participation in sports can actually ward off death.

It would seem the answer is yes. Out of the different sports included in the study, swimming, cycling, aerobics seemed to reduce mortality better than the others – but it was tennis that showed the largest reduction in all cause mortality. The researchers hope the new evidence that some sports may be more helpful than others in reducing mortality helps clinicians support sports participation as an effective form of health-enhancing physical activity.

"Health benefits of physical activity are well known, but the specific benefits of different sport disciplines are not," said Dr. Pekka Oja of the UKK Institute in Finland. "As millions and millions of people practice sports in their leisure time this type of physical activity have great potential to benefit the health of populations. In order to promote sports for public health, solid evidence of the health benefits is needed. This is a challenge for both the research community and the sports community."

In a previous study, Oja's team had found evidence of health benefits for running and football, but evidence for other sports was either inconclusive or tenuous. He told Kinesiology Today that the team determined further study using rigorous research designs was needed.

So the researchers looked at data collected by the Health Survey for England and the Scottish Health Survey from 1994 to 2008 and included 80,306 British adults aged 30-98. The survey participants were asked, among other questions, about what kinds and what level of intensity of physical activity they routinely engage in. The primary sports included in the final analysis were cycling, swimming, aerobics, running, football and rugby and racquet sports including badminton, tennis and squash. Other sports were considered but not included in the final analysis because of low participation rates.

When the researchers took a census of the more than 80,000 people in the study, they learned 8,790 had died since completing the survey. Of those, 1,909 people had succumbed to cardiovascular disease. The results: Racquet sports were associated with the largest reduction in all-cause mortality – people who self-identified as tennis,

Continue on Page 14

badminton or squash players died at a rate 47 percent lower than the rest. Additionally, swimmers and aerobics participants seem to live longer than the rest, as they died at respective rates 28 and 27 percent lower than the rest of the study participants. Cyclers also did well – they showed a 15 percent reduced risk of all-cause mortality.

Surprisingly, Oja said, participation in running did not lead to a significant reduction in mortality for the study participants – although other studies have shown that to be the case. He suspects that the likely reason for that is the runners included in this particular study tended to be younger than participants in other sports, so a longer follow-up period would be needed to see comparative results.

The researchers also looked specifically at death caused by cardiovascular disease, and the results were similar. At a 56 percent reduction, racquet sports again were most effective at lowering mortality rates when it comes to cardiovascular-related causes of death.

Swimming also excelled – swimmers experienced fatal cardiovascular disease 41 percent less than the other study participants. Aerobics registered a 36 percent reduction. Cycling, running and football were not found to be associated with a reduced risk of cardiovascular disease mortality.

Among some of the other key findings in the study:

Any amount of exercise is better than none. Study participants who reported that they were engaged in any kind of physical activity died at rates 28 percent less than those who reported they were not active.

Swimming was the overall most popular sport in the study, with 14.7 percent of women and 11.9 percent of men reporting that they were swimmers. But cycling was the more popular sport for men at 13 percent participation. For women, aerobics was second to swimming at 9.8 percent participation.

Less than half of the participants reported they do not meet physical activity guidelines set by the World Health Organization. Only 44.3 percent of study participants reported that they were meeting the recommended 150 minutes of moderate-intensity exercise or 75 minutes of vigorous exercise per week for adults aged 18-64.

There are some remaining questions that the researchers would like to answer, Oja said. In particular, they would like to know whether more intense or more frequent exercise leads to better outcomes continues to be a source of debate in the scientific community. Oja's study did not establish any meaningful associations between the dose of physical activity and the body's response to it.

That's not unlike other research which has not been able to get at the answer to that question. "The dose-response relationship between physical activity and health benefits is of great importance for physical activity promotion for health, and equally important for sports promotion for health," Oja said. "In our study, we found no consistent relationships, possibly due to the imprecise measures of the dose. Therefore, we suggest 'need for further investigation.'"

Oja said the research team hopes that clinicians and other health officials hope that this evidence assists them in developing physical activity plans and public health programs. KT

Oja, P., Kelly, P., Pedisic, Z., Titze, S., Bauman, A., Foster, C., . . . Stamatakis, E. (2016). Associations of specific types of sports and exercise with all-cause and cardiovascular-disease mortality: A cohort study of 80 306 British adults. *British Journal of Sports Medicine,* 51(10), 812-817. doi:10.1136/bjsports-2016-096822

Physical Activity and Adults. (n.d.). Retrieved September 30, 2017, from http://www.who.int/dietphysicalactivity/factsheet_adults/en/

Editor's One Cent's Worth

A Challenge to Share Your Research!

By Penny McCullagh, Ph.D. KT Editor

Penny McCullagh

Is anybody reading your original research articles? Well it can be pretty humbling if you go to google scholar and look up one of your articles and see the number of citations. I did so and there is another P. McCullagh out there that had over 32,000 citations for an article on generalized linear models. Although I study modeling (observational learning) that was not an article by this P. McCullagh.

What if you are doing some research that might be of interest or helpful to the public? With funding agencies putting more pressure to provide translational research, investigators are now working on going beyond basic and clinical research to conducting research that has application in the community. (See article by Rubio that helps define translational research).

Or what if you just have an interesting idea that you think might be of interest to the public? Many times we in Kinesiology do not feel as recognized for our research as perhaps other faculty in other more mainstream disciplines. President Templin talked about that in his President's Column in the Summer 2017 issue of Kinesiology Today. He asked: Does anyone even know what you do? Do others have any idea about the marvelous contributions you make?

Well how would you like it if you could reach 5 million users and reach up to 35 million readers through republishing for free under a Creative Commons license. Articles are also tracked by social media such as Facebook and Twitter.

I was introduced to an online new source – The Conversation (https://theconversation.com/us)- by Dr. Grant Tomkinson of the University of North Dakota (see article in this issue on Does Finger Sizes Influence Performance?).

The Conversation was started by Andrew Jaspan in Australia in 2011 in connection with the University of Melbourne. It expanded to the UK in 2013 and the US in 2014. It is expanding to other nations as well. According to the web site: "The Conversation has been successfully established as a bold new media outlet that informs public debate with knowledge-based journalism that is responsible, ethical and evidence based, by unlocking the knowledge of researchers and academics to provide the public with clarity and insight into society's greatest problems, at a time when traditional media business models are under challenge and trust in media is under attack."

The articles are written by academics in their area of expertise (you need to submit your credentials) and edited by journalists so they are reader friendly by the public. The articles are typically less than 1000 words and are free to read, and there is also the option to republish articles. The Conversation is looking for timely topics that will be interesting to the public and written by academic experts. Authors must be affiliated with a university and before you write an article you can get feedback prior to writing the article by contacting this link.

Another advantage of publishing in The Conversation is that they supply you with an author dashboard. From this you can see how many people read your article and where the people are located and whether other media, including social media outlets pick up your story. An article can also lead people to your original research article.

Let me know at kintodayaka@gmail.com if you attempted to get into The Conversation. If so send it along and I could look at republishing it in KT.

Rubio, D. M., Schoenbaum, E. E., Lee, L. S., Schteingart, D. E., Marantz, P. R., Anderson, K. E., … Esposito, K. (2010). Defining Translational Research: Implications for Training. *Academic Medicine : Journal of the Association of American Medical Colleges,* 85(3), 470–475. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2829707/

Weigh Everyday!

By Amy Rose, Staff Writer

Whether you are trying to lose weight, maintain a weight loss or just keep from gaining, it appears one of the best things you can do is simply step on the scale each day. Meghan Butryn, Director of Research at the Center for Weight, Eating, and Lifestyle Science, Drexel University, has published studies on the benefits of self-monitoring on the scales and she says people shouldn't be afraid to get on the scales. "It is one valuable and objective way to evaluate your lifestyle," Butryn said.

Butryn and others conducted a study involving the National Weight Control Registry to measure the relationship between self-weighing and weight loss maintenance. Over 3,000 participants were asked about their self-weighing habits and tracked their weight and frequency of self-monitoring for one year. At the one-year follow-up, weight gain was significantly greater for participants whose self-weighing frequency decreased compared to those that stayed the weighed the same amount or increased over that same period. "Seeing a weight loss can be motivation to keep up the good work, but a gain would be a warning sign that lifestyle changes may be needed, such as changes in eating habits and activity levels." said Butryn.

Meghan Butryn

Having a daily habit of self-monitoring your weight is also seen as a good to be consistent with a weight maintenance routine. If it is a part of a daily routine, then makes it less of decision each day if you will step on the scale. Butryn recommends weighing at the same time each day and wearing the same amount of clothing. She also says early mornings are the best time to weigh: after you go to the bathroom and before eating breakfast.

A study by researchers at Cornell University and published in the Journal of Obesity, concurs with Butryn's findings. They asked subjects to track their daily weight over a two-year period. The subjects were allowed to use any weight loss method they preferred. The study found that subjects who lost weight in the first year of the program were able to maintain that weight loss throughout the second year. That is significant because studies show that about 40 percent of weight loss is regained in one year and almost 100 percent

Continue on Page 17

of the weight is regained after five years. "We think the scale also acts as a priming mechanism, making you conscious of food and enabling you to make choices that are consistent with your weight," Cornell professor of nutrition and psychology and senior author, David Levitsky told Science Daily. Another study by Butryn and colleagues at Drexel University and the University of Pennsylvania, tracked the effects of daily self-weighing on female college-aged students trying to avoid the Freshman 15. This study also found that those who reported at least one period of daily self-weighing over a two-year study saw a drop in their body mass index. Those who did not weigh themselves saw no decline in weight. The young women were not required to be a part of any prescribed weight loss program during the study. "It is possible that the relation between self-weighing and weight might be drive by scale avoidance among those who experienced weight gain," the researchers wrote. People tend to avoid the scales when they know the numbers are going up.

While daily weight monitoring alone, may not be enough to facilitate a significant weight loss. Researchers agree that it is definitely an important strategy to enhance weight-loss efforts and maintain weight loss success for an extended period of time. KT

Butryn, ML, Phelan, S, Hill JO, Wing RR. (2007) Consistent self-monitoring of weight: a key component of successful weight loss maintenance. [Abstract]. *Obesity* (Silver Spring). doi: 10.1038/oby.207.386

Pacanowski, C.R., Levitsky, D.A., (2015). Frequent Self-Weighing and Visual Feedback for Weight Loss in Overweight Adults. *Journal of Obesity.* doi.10.1155/2015/763680

Rosenbaum, D. L., Espel, H. M., Butryn, M. L., Zhang, F., & Lowe, M. R. (2017). College Freshmen who weighed themselves daily lost body fat [Abstract]. *Journal of Behavioral Medicine.* doi:10.1007/s10865-017-8970-y

It is About TIME – The Science of Exercise

By Penny McCullagh, Ph.D. KT Editor

Time Magazine periodically produces special editions dedicated to a single topic. Topics are devoted to either single individuals or targeted topics and in the past have included:

- Pope Francis
- Your Body
- Marijuana
- Goes Main Street
- Robin Williams
- Abraham Lincoln
- Christianity

In September of 2017, Time released a Special Edition called "The Science of Exercise". It features 17 short articles related to exercise. Some of the topics are:

- The New Science of Exercise
- The Truth About Weight Loss
- The Power of Strength Training
- Ways to Motivate Yourself to Exercise.

I was excited about exercise being featured on time and noted so in an article in the Fall 2016 issue of Kinesiology Today -"It's About Time" (see link below). Here is a small excerpt:

"Some would argue that the magazine cover is the most important page in the publication. It illustrates the flavor of the magazine and must be appealing—especially to lure first-time buyers. Well, the September 12, 2016, cover of Time Magazine was titled "The Exercise Cure: The Surprising Science of a LifeChanging Workout" and featured a montaged image of a jump roper in motion. The article inside, written by Mandy Oaklander, uses recent research to illustrate that this attention-catching title is not an exaggeration. Oaklander suggests that despite public-awareness campaigns, "the health benefits of exercise have not been effectively communicated to the average American." Oaklander begins the article by featuring a McMaster University professor, Dr. Mark Tarnopolsky, who dreamed in his youth of becoming a physical education teacher (she referred to this profession as gym teacher). She suggests that he has blurred the lines between jock and nerd—a crossover that probably applies to many individuals in kinesiology today. It is likely the reason so many of us are so passionate about our field"

I was even more excited to see an entire special issue dedicated to exercise. I attended the annual meeting of the National Academy of Kinesiology (http://www.nationalacademyofkinesiology.org/) in September. The meeting is attended by Fellows who are recognized as expert researchers across the various sub-disciplines in kinesiology. I asked and number of Fellows to examine the Special Issue and here are their commentaries.*

Continue on Page 19

Barbara Ainsworth, Ph.D., MPH

Regents Professor, School of Nutrition and Health Promotion, Arizona State University, National Academy of Kinesiology Fellow #376, President American College of Sports Medicine, 2011-2012. 2018 ACSM Honor Award recipient.

Barbara Ainsworth

The cover shows an active, fit woman, reminiscent of Leonardo da Vinci's image of the male in a similar pose. Women are active participants in the exercise and fitness movement. Three words – younger, smarter, stronger reflect the powerful impact of exercise on longevity, resistance to mental and emotional decline, and enhancement of bodily systems, including the impact of regular exercise on building strength, cardiorespiratory endurance, and metabolic fitness. A cover well done!

The issue is a winner in presenting evidence-based exercise science (and not the fads) about the health benefits of all types of exercise. A strength was in the quotes from exercise scientists who validated the information. The issue was an easy read and inspirational that anyone can go from an unhealthy couch potato to an athlete. It takes time a perseverance.

The focus was on the ***health*** science of exercise in adults. Another title could have been Exercise is Medicine. It did not cover the breadth of Kinesiology's exercise science – social systems in sport, motor development, etc. It failed to discuss youth. Of the scientists quoted, some are in Kinesiology and others are not. I am not surprised nor am I bothered. Physicians and scientists globally have contributed to the evidence about the health-benefits of active lifestyles and the detriments of sedentary behaviors. We need to get this message to the masses now as exercise is the best population strategy to maintain health and reduce health-care costs.

Bradley J. Cardinal, Ph.D.

***Professor at Oregon State* University, National Academy of Kinesiology Fellow #475 current President-Elect of NAK.**

Bradley Cardinal

Given the adage, "*Any publicity is good publicity*," that *Time* devoted its resources to producing this special issue is positive. ***Time*** has an estimated readership of ~26 million people worldwide. A cover feature on bookshelves and checkout stands is hard to miss. The potential reach of this special issue is enormous. Having said that, the special issue could have been better.

Message Coherency. Exercise was portrayed as a rationale behavior with an individual orientation. For those who do not make (or take) the time to "just do it," a subtle victim-blaming message was implied. Different degrees of accessibility, environmental influences, and social circumstances were ignored. Scare tactics were used and physical activity was portrayed as something to endure. The precise "dose" of physical activity was not clearly conveyed, neither was the role of "exercise" in (or for) weight loss.

Portrayal of Kinesiology. The majority of people quoted in the special issue would appear to fall under the kinesiology umbrella, though professionals from disciplines such as medicine and nutrition were also quoted. The people quoted had a wide range of titles, by my count 51. Kinesiology would be best served by using a common name.

Room for Improvement. This special issue can serve as a call-to-action for kinesiology. We need a stronger, more coherent, and more unifying message. We need to clearly articulate what is scientifically "known" from "unknown." Toward this end, and while the final printed word is not always

Continue on Page 20

in a person's control, a greater emphasis on media training is recommended.

Susan A. Bloomfield, National Academy of Kinesiology Fellow#566, Associate Dean for Research, Professor and Director of Bone Biology Laboratory | Dept. of Health & Kinesiology, Texas A&M University

Susan Bloomfield

This special issue of Time is an interesting and informative read, with a commendably rich integration of current research on exercise balanced by some lighter weight topics and the inspirational story about Bryan Reece, former-couch-potato-turned-Ironman.

What was particularly heartening was to see some of the most important findings from exercise science and public health of the last 15 -20 years highlighted:

- That moderate intensity exercise and even small volumes of exercise have significant health benefits in reducing mortality and morbidity
- That even housework and gardening and other work activities should be counted as "exercise"—they contribute to better cardiovascular and metabolic health
- The dangers of prolonged sitting and the value of standing more during the day

A wide variety of well-known exercise scientists/kinesiology experts are represented in the citations for the science-oriented articles; I would note that the vast majority of those scientists cited were male (>75%) until we get to "Truth about Weight Loss".

The vast majority of research findings were accurately described and translated into accessible language. Two missed opportunities/mis-citations:

- Oaklander's article "The New Science of Exercise" states "..all the recommendations for increasing bone density have included low-repetition, high-weight types of training".. This is not true; check ACSM's 2004 Position Stand on Physical Activity and Bone Health (I helped write this), which cites a variety of exercise modes that can be beneficial.
- Why did the authors not interview Masters amateur athletes in their 60's, 70's and 80's (and not just professional athletes in their 30's and 40's) to make the point about phenomenal athletic feats that are made possible by life-long vigorous training? I had the privilege this August of watching 81-year-old David Costill set several national records at this summer's U.S. Masters Swimming long-course national championships—including one for the grueling 400-meter individual medley!

Thanks to Barbara Ainsworth, Susan Bloomfield and Brad Cardinal for responding to the special issues of Time. Well everyone seemed somewhat pleased with the issue, there were also some concerns. One concern that I had is that there was no reference to any professional societies, and we are certainly not short of those in our small field. In my Editorial Column in the Spring, 2017 issue of KT, I lamented about how our field is relatively small, yet we have so many professional societies that represent our interests. If a targeted issue came out related to the medical field, I am sure there would be strong reference to the American Medical Association. We have so many professional societies related to exercise and physical activity, yet none were highlighted here. It is hard for the public to recognize our expertise when we are so broadly represented. We know who we are but perhaps the rest of the world does not.

http://www.americankinesiology.org/AcuCustom/Sitename/DAM/160/Fall_2016_r5.pdf

*All contributors are from departments that are members of AKA.

NPAP Quarterly Update – Walking and Walkability Report Card

by Jason R. Carter, AKA Board Member of the NPAP Alliance

Jason Carter

In the last issue of KT, we began taking a closer look the nine societal sectors highlighted within the National Physical Activity Plan (NPAP). We explored the business and Industry sector of NPAP, and while I had planned to dive into the Community, Recreation, Fitness, and Parks sector, something more urgent has been released from the NPAP Alliance this quarter – the 2017 U.S. Report Card on Walking and Walkability Communities. This report card represents the first comprehensive national assessment of walking and walkability in the United States, and the results are worth noting.

The primary goal of the Report Card on Walking and Walkability Communities was to assess the degree to which Americans and their communities meet recommended standards for walking and/or physical and social support for walking behavior. An expert panel chose nine factors to grade – 1) adult walking behavior, 2) children/youth walking behavior, 3) pedestrian infrastructure, 4) safety, 5) pedestrian policies, 6) institutional policies, 7) public transportation, 8) walkable neighborhoods, and 9) walking programs.

Data was obtained through a number of key resources, including (but not limited to) surveys supported by the Centers for Disease Control and Prevention, Department of Transportation, National Highway Traffic Safety Administration, and Environmental Protection Agency. The panel adopted an "A" to "F" grading system based on either the percentage of persons in the U.S. who engaged in a specified walking behavior, or the percentage of states that met the standard for community-level factors. A grade of "A" required 90-100%, "B" required 70-89%, "C" required 50-69%, "D" required 30-49%, and <30% resulted in an "F". If there was not sufficient information to assign a grade, and incomplete (INC) was provided.

The report card was not one you'd proudly hang on the refrigerator. As shown in the Table, we received five "F" grades, two "D" grades, one "C" grade, and one incomplete grade. On a positive note, we now have a baseline and there is plenty of room for improvement. The report notes that the panel opted for a grading scheme that resulted in "D" and "F" grades because there was collective agreement that each of the standards were attainable, as evidenced by the fact that several individuals were able to meet the person-level standards and some states met various community-levels standards.

FACTOR	GRADE
Adult Walking Behavior	C
Children/Youth Walking Behavior	F
Pedestrian Infrastructure	F
Safety	F
Pedestrian Policies	D
Institutional Policies	F
Public Transportation	F
Walkable Neighborhoods	D
Walking Programs	INC

So while results were a bit disappointing, we have many strategies and tools to fix this problem, including many excellent strategies outlined in the NPAP for nine key societal factors. Let's get to work!

Full access to the 2017 U.S. Report Card on Walking and Walkability Communities can be found at:
http://www.physicalactivityplan.org/projects/walking/Walking-report-card-FINAL.pdf
Full access to the NPAP can be found at:
http://physicalactivityplan.org/docs/2016NPAP_Finalforwebsite.pdf

National Physical Activity Plan

Executive Director

AKA continues to Grow

By Amelia Lee, AKA Executive Director

Strategic Planning and Assessment Program

Amelia Lee

It has become increasingly clear that the accountability culture in higher education requires a complex set of skills for academic leaders if they are to be successful in administrative positions. Department chairs are being asked more and more for documentation for the effectiveness and efficiency of their academic units. These demands have resulted in a move toward the use of strategic planning and assessment as a way to determine goals related to the departmental mission, defining actions that will achieve those goals, and determining the extent to which the goals have been achieved. Since 2008 the AKA has offered consultant assistance with strategic planning and assessment for its members and more than 20 member units have participated thus far in the support program that is one of the many benefits of membership. Dr. Gil Reeve initiated the program and has served as the primary consultant. Today, however, we have a team of consultants who have completed the AKA Strategic Planning and Assessment Training Workshop offered by Gil and are now available to serve as facilitators for the program in the future.

AKA Strategic Planning Consultants

Tom Templin, University of Michigan
Jason Carter, Michigan Technological University
Penny McCullagh, California State University East Bay
Jeff Fairbrother, University of Tennessee

AKA is Growing in Numbers

One of our major goals has been to increase the number of academic departments or schools participating in AKA and try to achieve a balance between small, medium and large units. This past year, thanks to the work of our membership committee, some progress has been made in these areas. We now have 169 members and this includes 17 new members in 2017. Also, it might be useful to mention that just this month the membership has expired for 6 units and I predict that all of those will renew. That gives us a new total of 175 members. So looking at our Strategic Plan and the timeline and tactics for increasing membership we have been quite successful. In 2010 there were 126 members and in 2015 that number had increased to 157. The goal in the Strategic Plan was to have 170 members by 2018 and we are basically there.

Welcome to our new members joining in 2017:

- University of California, Berkeley
- William Penn University
- Manhattanville College
- University of Central Missouri
- Pepperdine University
- University of Sioux Falls
- Tulane University
- Chaffey College
- Lake Superior State University
- University of Saint Katherine
- University of Montana Western

Continue on Page 23

Executive Director

- University of Wisconsin Stout
- University of Houston-Victoria
- Rice University
- Rutgers
- High Point University
- University of Texas at El Paso

Another Action Item on the Strategic Plan is to increase the number of smaller units including Community Colleges and those departments offering bachelor degrees. Of the 17 new members during 2017 we attracted one Community College and 12 bachelor granting units. Thanks again to the Membership Committee for a successful year!

Membership Committee

Sarah Price, Chair, Florida A&M University
Karen Francis, University of San Francisco
Steve McCole, McDaniel College,
Ting Liu, Texas State University
Karen McConnell, Pacific Lutheran University
Gary Heise, University of Northern Colorado
Tom Templin, Liaison, University of Michigan
Kim Scott, Liaison, Business Office

AKA 2018 Leadership Workshop Dates and Themes

Online Registration will open on November 1st

Both Pre-Workshop Symposia will be Thursday, January 25 from 1-5 pm and Friday, January 26 from 8 am – noon.

Pre-Workshop Symposium #1: Personnel Issues in Kinesiology

Pre-Workshop Symposium#2: Internships in Kinesiology

Workshop Theme: Promoting Quality Undergraduate Programs in Kinesiology (1:00 pm on Friday, January 26-10:00 pm Saturday, January 27)

Kinesiology Today

KT Editor: Penny McCullagh, Ph.D.

Managing Editor & Writer: Amy Rose

Staff Writer: Pat Wade

Designer: Sean Roosevelt