### FACULTY OF KINESIOLOGY AND PHYSICAL EDUCATION



# ANNUAL RESEARCH REPORT 2014-2015



### **ANNUAL RESEARCH REPORT 2014-2015**

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# WELCOME

Welcome to the 2014-15 Research Report of the Faculty of Kinesiology and Physical Education.

In this report, we showcase the innovative, impactful and promising research endeavours of our faculty members. It was an exceptional year as the Faculty secured its very first Canada Research Chair, held by Catherine Sabiston in the area of Physical Activity and Mental Health. In line with last year's report, knowledge dissemination activities are historically high as faculty members collectively published 165 peer-reviewed articles, 3 books, 40 book chapters and made nearly 200 conference presentations. And such productivity continues to exhibit highly promising levels because faculty members also secured no less than 30 research grants and contracts, garnering more than 2.7 million dollars. These are exceptional funding totals for a Faculty of our size, and will support knowledge creation for many years to

In the following pages, you will read about many our faculty members, their trainees, and their truly meaningful research accomplishments. You will note how much this report reflects activities in the multidisciplinary areas that characterize the intellectual richness and strengths of our Faculty.

We are proud of our research progress and hope that your will enjoy reading this annual portrayal of our scholarly productivity.

Gretchen Kerr, Acting Dean Faculty of Kinesiology and Physical Education



### MEET THE RESEARCH FACULTY



Prof. Kelly Arbour-Nicitopoulos Psychosocial predictors of physical activity interventions in populations with chronic disability kelly.arbour@utoronto.ca



**Prof. Michael Hutchison** Sport concussion & brain injury - rehabilitation - injury prevention neuropsychology - epidemiology michael.hutchison@utoronto.ca

Prof. Ira Jacobs



**Prof. Catherine Sabiston** Psychosocial determinants of health behaviour - body-related emotions - physical activity & cancer - mental health catherine sahiston@utoronto.ca



**Prof. Michael Atkinson** Physical cultural studies - bioethics and biopedagogies - violence, aggression & health - research methodologies michael.atkinson@utoronto.ca



Exercise physiology - adaptations to acute short-term, high-intensity exercise - exercise pharmacology dean.kpe@utoronto.ca



**Prof. Katherine Tamminen** Sport psychology - stress, coping & emotion vouth sport & adolescent athletes katherine.tamminen@utoronto.ca



**Prof. Tyson Beach** Biomechanics & ergonomics of work, sport and exercise - qualitative & quantitative analysis of human movement tvson.beach@utoronto.ca



Prof. Gretchen Kerr Harassment & abuse in youth sport - athletecentred coaching practices - the retirement transition from sport gretchen.kerr@utoronto.ca



Increasing access to cardiovascular health - exercise and aging - exercise and performance - fitness testing scott.thomas@utoronto.ca

**Prof. Scott Thomas** 



**Prof. Simon Darnell** Sociology of sport & physical activity sport for development & peace - sport & public policy simon.darnell@utoronto.ca



Prof. Bruce Kidd History & political economy of Canadian sport and physical activity - Olympic, Paralympic and Commonwealth Games bruce.kidd@utoronto.ca



Prof. Luc Tremblay Multisensory integration: vision, proprioception, audition - neuromotor control of voluntary action luc.tremblay@utoronto.ca



**Prof. Peter Donnelly** Sport subcultures - sport and social inequality - sport and space - sociology of risk taking peter.donnelly@utoronto.ca



Cellular response to muscle damage - heat shock proteins and their ability to protect skeletal muscle from damage marius.locke@utoronto.ca

**Prof. Marius Locke** 



**Prof. Greg Wells** Physiological assessment & training - high performance sport - chronic diseases in children - respiratory physiology greg.wells@utoronto.ca



Prof. Guy Faulkner Physical activity (PA) promotion in the community & rehabilitation - PA and psychological well-being in children & adults guv.faulkner@utoronto.ca



**Prof. Margaret MacNeill** Health communication - health & physical literacy - visual media methodologies critical policy studies of public health margaret.macneill@utoronto.ca



Prof. Tim Welsh Planning & control of goal-directed limb & eye movements - selective attention - movement in social contexts t.welsh@utoronto.ca



Prof. David Frost Musculoskeletal health & injury prevention movement screening and evaluation - strength & conditioning d.frost@utoronto.ca



**Prof. Lynda Mainwaring** Emotional recovery from concussion, psychological recovery from dance & athletic injuries - sport psychology lynda.mainwaring@utoronto.ca



**PUBLICATIONS SUMMARY** Count 9 39 Non-peer reviewed Articles **Conference Abstracts** 31 5 Intellectual property 6 **Awards** Books 6 46 **Book Chapters** 206 Peer-reviewed articles 175 Conference presentations



Sociology of physical activity & health - cultural geographies of child and youth physical activity/sport environments c.fusco@utoronto.ca

**Prof. Caroline Fusco** 





Prof. Dan Moore Muscle protein metabolism - sports nutrition training adaptations - musculoskeletal health with exercise & disuse dr.moore@utoronto.ca



**Prof. Doug Richards** Concussions in sport, clinical sport medicine, biomechanics of injury - health & lifestyle injury prevention doug.richards@utoronto.ca







Professor Ira Jacobs

Professor Gretchen Kerr

**Professor Luc Tremblay** 

# **Appointment** announcements

**Professor Ira Jacobs** has been appointed to a second term as dean of the Faculty of Kinesiology and Physical Education. His term will run from July 1, 2015 to June 30, 2021.

In his first term, Jacobs led the development of a new Academic Plan. He will continue to work on its implementation, strategic goals and priorities. Jacobs has delivered on the decanal priorities of enhancing and deepening the research capacity and profile of the Faculty, and seeing two capital construction projects to fruition. He has been instrumental in growing undergraduate and graduate programs in kinesiology and exercise sciences and ensuring their high academic quality. Overall, Jacobs' leadership has the Faculty well-positioned to continue on a positive upward trajectory in terms of its enrolment plans, research profile and reputation during his second term.

**Professor Gretchen Kerr** has been appointed acting dean of the Faculty of Kinesiology and Physical Education while Jacobs takes a 12-month administrative leave. Kerr will serve in this capacity from July 1, 2015 to June 30, 2016, at which point Jacobs will begin his second term as dean.

Kerr has served as vice-dean, academic affairs at KPE since 2013, and prior to this held the position of associate dean, undergraduate education. She has significant administrative experience, positive relations across the Faculty and knowledge of all aspects of KPE, including the administrative, academic, and co-curricular areas.

In her current role, Kerr has oversight of the development, management and evaluation of the Faculty's undergraduate and graduate degree programs. She was instrumental in the development of the Faculty's new academic plan and is leading the implementation of its innovative teaching and learning initiatives.

### Luc Tremblay named Associate Dean, Research

**Professor Luc Tremblay** has been appointed associate dean, research in the Faculty. Tremblay's term began on January 1, 2015 and will run until June 30, 2018.

"Professor Tremblay has proven his vision in several ways leading up to this appointment, most recently as chair of the KPE Research Committee," says Dean Ira Jacobs. "His research skills and experience will help the Faculty to

strengthen its capacity and recognition in research, scholarship, innovation and creative activity."

Tremblay received his PhD in motor control from McMaster University in 2002. He was appointed as an assistant professor at the University of Toronto in 2003 and was promoted to associate professor in 2008. In addition to serving as chair for the KPE Research Committee, he served as president of the Canadian Society for Psychomotor Learning and Sport Psychology, and vice-president of University and External Affairs of the University of Toronto Faculty Association. Tremblay's research has been funded by the National Sciences and Engineering Research Council of Canada, the Ontario Neurotrauma Foundation, the Ontario Research Fund, and the Canadian Foundation for Innovation. In his new role, Tremblay looks forward to fostering sport and health research that can positively impact the broader community.

"I am particularly excited to build mutually beneficial relationships between research and all other activity streams in our Faculty," says Tremblay. "Creating these important links will help KPE yield better and more impactful research that can, in turn, improve the lives of all Canadians. After all, if our research does not tackle the physical inactivity pandemic, then whose research will?"

Originally published in *Pursuit* Summer 2015 by Adrienne Harry

PHOTOS/ LEFT MIDDLE: SEED9 / RIGHT: JOHN HRYNIUK

# Sabiston named national leader

in mental health and exercise research

Professor Catherine Sabiston was recently awarded a Canada Research Chair (CRC) in Physical Activity and Mental Health by the Government of Canada.

Aimed at making Canada one of the world's top countries in research and development, the CRC program invests over \$260 million annually to establish research professorships for some of Canada's most promising scholars. Sabiston is the first CRC recipient in the Faculty of Kinesiology and Physical Education.

Focused on studying 'drugless' methods of enhancing mental health, Sabiston's research program will examine factors related to physical activity and mental health, particularly issues surrounding body image, self-conscious emotions, stress, depression and anxiety. Using the new Mental Health and Physical Activity Research Center (MPARC), Sabiston hopes to develop and test initiatives to get more people physically active, and in turn, offset the prediction that mental health problems will surpass all chronic diseases in the next ten years.



"We so frequently pathologize everything, but it is equally important to study how physical activity can increase positive emotional experiences." says Sabiston. The CRC will provide support to study the associations between sport and exercise and mental health and to help identify ways to get more people more active and less sedentary."

Sabiston is a leader in both body image research and positive psychology perspectives in oncology. Much of her research is devoted to the impacts of negative self-perception on teenage girls' participation in sport and the impact of physical activity on cancer survivors. One of her most recent endeavours is Active Match, an online partnering system

designed to help women who are cancer survivors find an exercise partner. In 2016, Sabiston will work with adolescent girls to develop a body acceptance program for young female athletes, based on data she is currently collecting on body image and emotion in teenagers.

"There is an important association between physical activity and mental health that is often overlooked in research and practice," says Sabiston. "It is important that Canadians increase their physical activity levels because this can have a huge impact on both the physical and mental health of people and reduce health care costs."

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# ANEWYEW

THE GOLDRING CENTRE FOR HIGH PERFORMANCE SPORT IS CHANGING THE FACE OF SPORT AND PHYSICAL ACTIVITY. THE WAIT IS OVER.







### A NEW HOME FOR THE SPORT MEDICINE CLINIC **AND RESEARCH LABS**

Injuries are unfortunately a fact of life for both recreational and high performance athletes. Luckily for the students and athletes using the new Goldring Centre for High Performance Sport, help is now only two floors away: The David L. McIntosh Sport Medicine Clinic is pulling up stakes from the basement of the Athletic Centre and moving to the airy fourth floor of the Goldring Centre.

"We're excited about the quantity of space, the quality and the location," says Dr. Douglas Richards, medical director for the clinic.

The clinic's footprint will be larger than it was in the Athletic Centre, allowing for more consulting rooms and new equipment. A digital equipment centre within the clinic will house a magnetic resonance imaging (MRI) machine, ultasound and X-ray machine and will be outfitted once arrangements with a third party operator are in place.

Richards is understandably enthusiastic about the clinic facilities. The space is purpose-built for the clinic and traffic flow is being intelligently redesigned for the new layout. A full wall of windows will bring light to the entire clinic; even the inner-corridor examination rooms will have natural light from reflective ceiling tubes that reach up to the roof of the building and draw in sunlight.

"The clinic is built to do what it's supposed to do, with a location that is accessible to the public," says Richards. It's also a bonus that the new clinic is located immediately beside the research labs where scientists will be actively studying how to help individuals and athletes perform better in recreation and sport. "Consultations will be easy to do."

The clinic is also spacious enough to work as a teaching facility for U of T's graduate students, be they physicians or physical therapists. And it has been built to accommodate state-of-theart rehabilitation equipment that will improve the quality of therapeutic exercise.

"Without a doubt, we'll have the best physical space of any small sports medicine clinic in Canada," says Richards.

Around the corner from the clinic, more than 600 square metres (6500 square feet) of space is dedicated to research labs for the Faculty of Kinesiology and Physical Education. Here faculty and students will investigate the latest and greatest in sport and exercise - from biomechanics and training for performance, to athlete nutrition, sport psychology and socio-cultural perspectives on participation in sport.

"The first thing that this building does is increase our capacity for everything we do. Convergence is also key", says Ira Jacobs, dean of the Faculty.

The co-location of research and clinical spaces in the new Goldring Centre will create a place for sport medicine specialists, exercise scientists, coaches and trainers to come together to share ideas, test theories and translate breakthroughs into ever higher standards of practice for the care, training and coaching our very active students and athletes. This integration of academic and athletic programs is one of the Faculty of Kinesiology and Physical Education's most distinct features and this synergy stands to be further strengthened at the Goldring Centre.

"Researchers won't only use athletes as subjects, they'll give their findings back to the trainers, athletes and their coaches to better inform them. That's really unique. You don't see that all the time," says Anita Comella, assistant dean of co-curricular physical activity and sport.

And so, after years of planning and almost 34 months of construction, the dream of the Goldring Centre for High Performance Sport has been realized – and with it the university is fulfilling its ambition of providing students, student-athletes, faculty and staff with critical space for developing both knowledge and talent in sport and sport science – and ultimately, a culture of fitness and healthy living for all who walk through its doors.

### SPORT & EXERCISE RESEARCH IN THE GOLDRING CENTRE

Biomechanics and Sport Medicine Laboratory Principal Investigators: Tyson Beach, David Frost, Doug Richards

Sport and Cultural Environments (SPaCE) Laboratory Principal Investigator: Caroline Fusco

Dr. Terry Kavanagh Heart Health Lab Principal Investigator: Jack Goodman

Media and Motion Collaboratory Principal Investigators: Margaret MacNeill, Simon Darnell,

Guy Faulkner, Bruce Kidd, Peter Donnelly

Sport and Performance Psychology Laboratory Principal Investigators: Katherine Tamminen, Gretchen Kerr

Training and Performance Laboratory Principal Investigator: Scott Thomas

Sensorimotor Integration Laboratory Principal Investigators: Luc Tremblay, Tim Welsh

**Human Physiology Research Laboratory** Principal Investigator: Greg Wells

lovate/Muscletech Metabolism and Sports Science **Lahoratory** Principal Investigator: Dan Moore

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This summer, thousands of the world's top athletes will descend on Toronto to compete in the Pan Am and Parapan Am Games, showcasing not only athletic prowess, but the dynamic and thriving City of Toronto. According

"These Games have provided an incredible opportunity for innovative city planning to improve the health of all of our citizens."- Peter Donnelly

to organizers, a key priority of TO2015 is to "foster sport development and healthy living." Professor Peter Donnelly says there are plenty of opportunities for international games to create a legacy of health for a host city. But it's up to Toronto to make it happen.

"First of all, a legacy [of health and increased physical activity] needs to be constructed into the bid, with a plan clearly set for putting that money to use," Donnelly explains. "If it's not there, once you've won the bid, everything is about getting ready for the games." Professor Bruce Kidd, vice-president and principal of University of Toronto Scarborough, sees the same trend. "Very few major games hosts have given much thought to stimulating broad participation after, as a result, of the games. In fact, the track record is extremely disappointing. But I'm hopeful that we can do a better job in Toronto."

Donnelly, who spearheads U of T's Centre for Sport Policy Studies, points to the London Olympics as an example of good intentions that fell by the wayside. Organizers of the 2012 Olympics vowed that the Games would 'inspire a generation.' "It was all about increasing participation in the UK. That was part of their bid; they put a little funding into school sports for a while. There were a couple of experiments around opening access to swimming pools," Says Donnelly. Over time though, enthusiasm waned. "The Games ended up costing so much, the money got pulled from those initiatives. Funding needs to be built in as absolute."

Donnelly says that plans at the newly-built UTSC pools have established a good framework for long-term results. "The use agreement is really good. It's for high performance; it's for UTSC students and it's for the community." Kidd is also optimistic because there has been local buy-in to the planning and financing of Toronto 2015's major facilities—both new builds and renovations. "While 56 percent of the funds came from the federal and provincial governments through Toronto 2015, the local municipalities and universities that got these

facilities had to come up with the other 44 percent," Kidd explains, citing the Back Campus fields on St. George campus as an example. "The financial stake of local partners increases the chance that there will be a voice for 'sport for all' in the facilities after the Games." Given his role at UTSC, Kidd is especially committed to realizing the full potential of the new athletic facilities on that campus. "I can tell you that my colleagues and I are determined to use the Toronto Pan Am Sports Centre to make UTSC one of the most physical activity supportive and healthy campuses in North America."

Beyond U of T's borders, Donnelly says decisions made about the waterfront development can play a huge role in making Torontonians more active. Transforming the athletes' village to create affordable housing, and increasing access to the lake, could have a major impact. Improving parks and trail systems for the Games will also help to establish a healthier future. "If the city completes the Pan Am Path plan, for example, I think that could be a terrific legacy," he says. While part of the Pan Am Path is scheduled to open before the Games, the entire path is slated for completion by 2017. A series of connected trails that will create 84 kilometres of pathways for active transport, cultural enrichment and community building, the path will ultimately extend from the Claireville Reservoir to just south of Rouge Park.

"These Games have provided an incredible opportunity for innovative city planning to improve the health of all of our citizens; it's the first major games to come to Ontario since 1930," Donnelly says. "I hope we are able to make the most of it."

For Kidd, the real test is what we achieve on a sustainable basis by 2020. "We will have to work very hard in the months and years after the Games to ensure that our dreams for equitable sport for all will be realized."

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BY VALERIE IANCOVICH

**HOW HOSTING PAN AM ON HOME TURF MAY IMPACT TORONTO ATHLETES** 

PHOTOGRAPHY BY JOHN HRYNIUK

Field hockey standout Amanda Woodcroft has sacrificed a lot for her sport. She's moved across the country, altered her academic ambitions and logged countless hours on the field and in the gym. Her efforts culminate this June as she vies for a chance to represent Canada at the Pan Am Games. As a former OUA Rookie of the Year and top player on the CIS silver-medal-winning Varsity Blues team, there's a good chance her name will be on the back of a red and white jersey this summer.

Canada's field hockey team will compete in Woodcroft's backyard— University of Toronto's Back Campus fields, where she has proven her merits time and again. Woodcroft and her fellow Toronto athletes will have their work cut out for them this summer, competing in familiar environments under the watchful eye of local media, family and friends. According to Professors Catherine Sabiston and Katherine Tamminen, the experience will make for a complex emotional mix.

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#### Assessing the Hype

As the Games draw closer, competitors will fine tune their training regimes and habits. "Athletes, coaches and support staff often focus on the details of the workouts, practice drills, and physical performance benchmarks, but there is little focus on the mental side of sport, and that's the stuff that can really make or break a competition," says Sabiston, who specializes in sport and exercise psychology.

If Woodcroft makes the Canadian team she'll have the advantage of having competed on the world stage before. She's represented Canada at the Junior World Cup, two Indoor Pan American Cups and the Outdoor Pan American Cup, to name just a few. But being a hometown athlete at an international event will present unique challenges.

"If the Pan Am Games is the biggest event on home turf that you've been a part of, obviously you don't know how you will react until you get in that moment," Sabiston acknowledges. "But mentally training for that and appraising the hype and the arousal of it all as positive and letting it be a motivator, not a stressor, is the best mental exercise you can do. Training towards mindfulness can really help an athlete in a home turf environment."

#### **Home Field Advantage**

Once they wrap their minds around the scale of the competition, Toronto athletes can breathe a sigh of relief that many of the logistical challenges that accompany international competition will be non-issues for them. "Researchers find that the most stressful things that athletes encounter in competition are usually the things that are unexpected," says Tamminen who has conducted extensive research on athlete coping and emotion. "If you're competing in your home territory, in a familiar environment, that can reduce a number of unexpected stressors." Toronto athletes will be able to focus more exclusively on their performances, knowing that they don't have to worry about simple day-to-day things like negotiating travel times, navigating streets and venue locations, changes to their diets and adapting to new times zones. "That sense of comfort could really help our athletes," Tamminen explains.

The venues themselves can also add a feeling of comfort for Woodcroft and other local athletes. "They know the facilities are great," Sabiston says. "Many have had the chance to use them. They have the environment on their side."

High performance athletes who don't train in these kinds of state-of-the-art venues may feel intimidated by the Pan Am facilities. "It can be tough [competing in a new space]," Woodcroft admits. "It's good if we get to use to the field before a competition. There can be an initial shock if the stadium is bigger than we're used to." The standout midfielder is excited to show off the Back Campus fields, which were revitalized in preparation for the Games. "The new fields are awesome. The first time I was on them I was amazed by the atmosphere. It's such a beautiful part of campus. And then the fields themselves are world class."

Sabiston says Woodcroft's pride in her environment will help her to excel. "Rather than walking through someone else's doors, Toronto athletes are inviting people through theirs and that can be a very prosperous environment for success."

A familiar competition atmosphere will also be advantageous to the many athletes who use imagery to prepare for competition—picturing themselves scoring the winning goal or executing the perfect routine. Sabiston points out that knowing your space well allows these visual images to come to mind more clearly. "It's to an athlete's advantage to work with imagery and to take advantage of being familiar with the environment ahead of time. If you are travelling somewhere else, you can imagine yourself, but it can be hard when you can't imagine your surroundings." She points out that this technique can take as much practice as some of the physical work. "Athletes should start this visualization training as early as possible. Imagery can help bring them to a level of optimal performance."

Woodcroft has her own techniques for getting mentally prepared for a big match. "I picture myself beating the opponents. I usually select three points that I want to be the focus for that specific game or practice. I also get in a mindset that no matter who I am competing against I am going to win each and every battle and be better than the person I'm up against."



#### **Hometown Pressure**

It may seem that competing in an international sporting competition in a familiar environment would serve as a universal benefit for all local athletes. But when an athlete looks out into a sea of unfamiliar faces and sees their mother's teary, proud eyes or a best friend's fist pump, the moment can be intense. And not all competitors will find that intimate support helpful.

When Woodcroft is at an international competition, the butterflies in her

stomach flutter as soon as 'Oh Canada' erupts from the loudspeakers. On home turf though, a few butterflies can feel like a swarm when so many familiar eyes are looking on. "It will be different because when the national anthem is on and I look out into the crowd, all my family and friends will be there," says Woodcroft. "I feel as though this adds to the pressure because I want to do well in front of them. I'll have to make sure that I'm still focused on what my role is for the game, and not let outside distractions get in the way."

Sabiston says this is a common concern for hometown athletes. "The pressure can work in your favour because you're pumped up and ready to go, but it can also be an added stress to look good in front of your home fans. That's probably the biggest downside—that added pressure."

This anxiety can escalate even higher with the increased profile that comes with interest from local media. "You're suddenly more recognizable," explains Sabiston, "There will be so much more attention on you because of all of the profiles on home athletes. You can't fly under the radar as much."

Woodcroft hasn't had to cope with media attention very much leading up to these Games, but she's not fazed by the potential

spotlight. "I don't think the media attention will be a concern for me. I'm not a hundred percent sure about what to expect. But I believe I'll be able to block it out of my mind during the Games."

In addition to attention from local reporters, competing on the fields of the U of T campus means performing in front of the community Woodcroft knows well. She says she's felt a lot of support from U of T and that her peers are very interested in the Games. "Having my friends and family there



"Just perceiving that their family and friends are there if the athletes need them can be useful in generating positive emotions and decreasing stress." — Katherine Tamminen

will definitely be a source of support. I'm excited to show people that all of the hard work has paid off and that we're there for a reason."

Yet, Sabiston cautions athletes about feeling as though they need to prove anything to their friends and close supporters. "It's more about being in the moment and being proud of that moment no matter how you perform on home turf in front of your people."

Tamminen points out that focusing on the positive emotions associated with having friends and family engaged in the competition is beneficial. "Just perceiving that their family and friends are there if the athletes need them can be useful in generating positive emotions and decreasing stress."

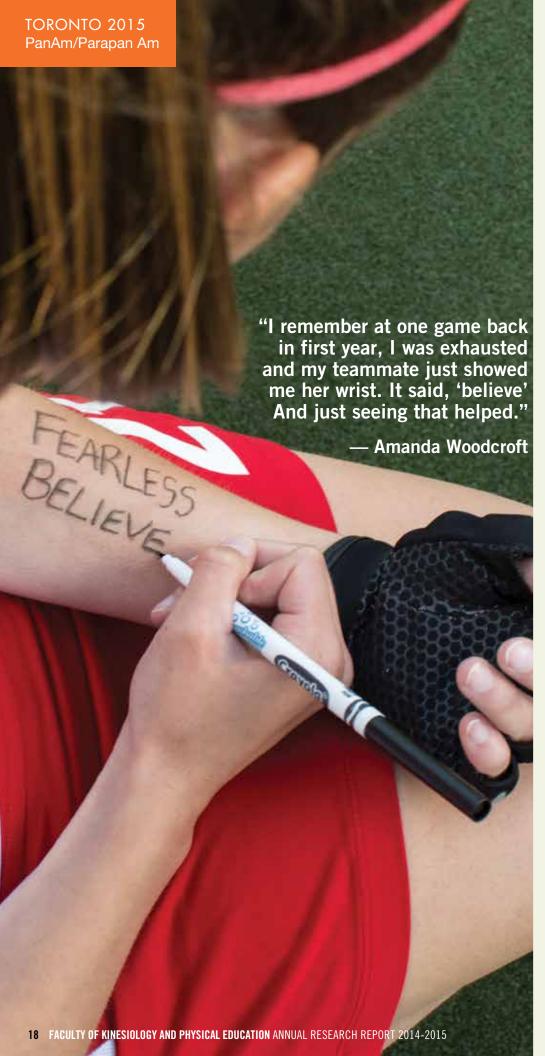
From a coach's perspective, there are risks associated with an athlete being in such close proximity to their friends and family, according to Tamminen. "Many [coaches] will encourage athletes competing on home turf to live in the athletes' village or at a hotel. They might even say that they shouldn't talk to family and friends. They limit the interactions the athletes have to limit the distractions."

Woodcroft plans to stay in the athletes' village if she makes the team. "Whenever we are at an international competition our team always stays together," she explains. Tamminen and Sabiston say this could work to the team's advantage, to try to keep the routines around these Games consistent with previous high-profile competitions further afield.

#### **Balancing act**

Consistency is important for athletes dealing with pre-game jitters. In order to deliver the best performance possible, many sport psychology consultants advise finding a balance between feeling anxious and feeling relaxed. "We talk about this all the time, in our field," says Sabiston. "You can be too comfortable. You need to know, for example, if living at home and having your parents make you breakfast before you compete will make you too relaxed. You need to reflect on that."

A healthy amount of stress can provide an edge if athletes build up the positive emotions associated with all of the excitement and downplay the negative thoughts and feelings.



"In sport psychology today, there is an emphasis on exploring how to promote positive emotions, instead of just studying how to reduce anxiety and stress," Tamminen explains. "The theory is called 'broaden and build.' When we experience these positive emotions, it can lead to improved performance." Putting this theory into practice can lead to higher motivation, more focused attention, and better problem solving skills all excellent resources for an athlete to call upon when the pressure's on to perform in front of the hometown crowd.

To allow these positive emotions to flourish, Sabiston advises that athletes listen to their internal dialogue leading up to a major competition and include training techniques to help silence any harsh, unproductive thoughts.

"Positive self-talk can be very motivating and helpful. Sometimes that means reframing what you're saying to yourself. If an athlete is saying negative things during training, for example, we could have them write something like the word 'stop', on their hand, so that every time they see that message it serves as a prompt."

They may also opt to write positive messages to themselves on post-it notes or on the screens of their

phones. "Those are reminders that get athletes closer to that mindfulness" Woodcroft says her teammates often have these pseudo tattoos inscribed on their arms. "I remember at one game back in first year, I was exhausted and my teammate just showed me her wrist. It said, 'believe' And just seeing that helped."

#### **Game Face**

When the big day arrives, Tamminen says the best thing Woodcroft and her teammates can do is stick to their tried-and-true traditions. "At these major competitions, athletes' days are so structured and organized. They should do what they always do in terms of training and practice and keep that as structured and normal as possible." She advises against implementing any new strategies at the last minute.

Woodcroft is accustomed to maintaining a regimented pre-game ritual. "We usually arrive at the field approximately 30 minutes before warm up. We will go to our change room and play our music. Right before warm up we usually play one more song to get everyone pumped up and ready for the game and then we walk out to our bench." After a tight group huddle, one teammate will remind the squad what their focus should be; they take a collective deep breath and hit the field.

#### **Games Over**

After months of anticipation, intense physical and mental training, it can seem like the finish lines are crossed and final points are tallied all too quickly, leaving athletes with an array of emotions from relief, to elation to despondency.

"It's not uncommon to hear that after the Olympics or another big event, athletes may feel a bit blue or glum; there was such a buildup, so now what?" Tamminen explains.

Of course, how the athletes perform will play a major role in how they feel after their Pan Am performance. If they do well, they can relax and celebrate—with so many of their family and friends around, it will be especially festive. But that celebratory spirit could be salt in the wound for a disappointed athlete. "It could, again, feel like a double-edged sword to be in their hometown," says Tamminen. "They might feel more let down because it happened on home turf, but they may also feel more supported because they have family and friends around them." If a Toronto athlete is unhappy with their Pan Am performance, Tamminen advises that they try to embrace the sense of comfort that comes from being at home. "If the Games are still going on, they can distract themselves from what happened at their event by cheering for teammates or other Canadian athletes. There are other local opportunities to deal with a disappointing performance."

Tamminen's research shows that athletes who are unhappy with their finishes and distance themselves or withdraw tend to report more negative outcomes in those moments and days following the event. "They say it took them a while to realize just how supportive their friends and family were around them. That's one of the benefits of this home turf advantage just having those people around you for support is a privilege that a lot of other Pan Am athletes won't have."

This support is already coming out in spades for Woodcroft. Her little sister Nicki is a fellow Blue and huge supporter and her parents are her biggest fans. "My mom is always there watching me!" she says. Her dad, Chris, a former Olympic wrestler and Pan Am medalist, couldn't be more proud. At the end of May, Woodcroft and her team hosted a series of matches against Ireland to prepare for the Games and her parents made their way from Waterloo to cheer her on.

"They'd never seen me play for Team Canada before. They were so excited!"

For all the ups and downs Woodcroft could face this summer when Toronto hosts the Pan Am Games, it seems that nothing, not even her home turf, will give her quite the same boost as the one she'll get from hearing the sound of the hometown crowd cheering.



### The science of sprint starts

For Olympian and 2015 Pan Am hopeful Sarah Wells, few athletic moments are as rife with anticipation as those leading up to when she places her feet on the starting blocks.

"Your start sets up your entire race," Wells explains. "When you have a great start, you've already done the work early and can carry that momentum forward. It makes it more likely that you will reach your top end speed and that's what track and field is all about—who can run the fastest and the longest."

"A good start can make or break an athlete's performance during a big race," says Bob Westman, sprints coach for the Varsity Blues track and field team.

Master's student Lindsay Musalem is working with Pan Ambound track athletes, Westman and Blues sprinters to optimize their starts, using custom-made force plates that have been affixed to training start blocks.

The equipment came from Own the Podium and has been used at the Canadian Sport Institute Ontario at the Pan Am Centre. Here at U of T they are being used for the first time to gather data during practice and training sessions.

"My thesis focuses on whether or not athletes can consistently reproduce the same start, using the force plates," Musalem explains. "So we're going into multiple practices and training sessions with the same athletes to see if, over time, they are able to reproduce strong starts."

not only how quickly the athletes are getting off the start blocks, but also how much force is being exerted on to the plate and back at the athlete and all directions, forwards and back, side-to-side and vertically. With the data gathered by the force plates, Musalem is able to see which direction the athletes are pushing in. In theory, the sprinter should push straight in the horizontal direction to get off the blocks as efficiently as possible.

"You don't want the athletes creating extraneous forces that aren't going to help them get out of the blocks," Musalem explains. The challenge for the athletes and coaches is to find a balance between the horizontal and the vertical because obviously they are coming out of the blocks with their torso over their body so they want to achieve balance while not falling over. "A good sprint start is kind of a controlled fall," Musalem explains. "It's attempting to maximize the horizontal while staying upright."

Westman has found the research to be helpful in developing more informed coaching techniques. "It's great because we get real-time results that we can take back to our offices to analyze and apply to training."

Wells, who competes in the 400 metre hurdles, appreciates the benefits that sport science-informed training can provide. "One of the benefits to training at U of T is the research like Lindsay's. It helps me find that extra edge."

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### **Toronto competition conditions**

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According to the Weather Network, when the Pan Am and Parapan Am Games happen in Toronto, odds are good that there will be "periods of very warm to hot weather. But similar to last summer, hot weather at 30°C and above will not dominate the summer." For athletes travelling to Toronto to compete at the Pan Am and Parapan Am Games, those sounds like favourable conditions for strong performances and even some personal bests. But it's not that simple, says Professor Greg Wells, who has done extensive research on athletic performances in various environments. It really comes down to their sport of choice, how sophisticated their training regime is and individual physiology.

"Many of us don't even consider the environment because we are in Toronto almost all the time. This is normal for us. But the athletes and coaches from across Canada and internationally are coming to a new place with a new and very different environment."

Canada is the coldest of the countries competing at Pan Am. A city like Rio de Janeiro rarely sees temperatures dip below 23 °C all year with summer days averaging at 30°C, often creeping closer to 40°C. Toronto, on the other hand, contends with frigid winter temperatures dipping into the -20s or colder with summer days averaging around 25 °C. These moderate conditions are indeed favourable in cycling, for example, when you don't want to get too hot or risk dehydration. But, Wells says that in sports like track and field's 100m dash, "hot weather can actually help the athletes."

There's also a huge amount of variability, he says. "You have athletes who can be hyper-adapted to altitude, cold, heat and all sorts of different conditions that make it beneficial for them to compete under similar conditions to those they train in on a daily basis."

During the London 2012, there were a

number of days that were quite cool. "Those temperatures were very beneficial for athletes from northern climates, but a disadvantage for athletes from equatorial countries," says Wells, who was a CTV commentator at those Games.

"I see it all the time—environmental factors play a huge role in performance in sports like cycling, beach volleyball and golf—really any sport that happens outdoors."

Wells has helped to train dozens of worldclass athletes and points out that the competitors and coaches have known for some time where and when these Games were being held. "They know pretty much what to expect in terms of weather in Toronto. People know that we are northern latitude. They've had opportunities to prepare, especially so if Pan Am Games are their number one priority event, they've done their preparations to adapt to the temperatures."

If athletes from hotter climates are not adequately prepared, it will be difficult for their bodies to manage Wells explains. "Thermoregulation—keeping your body temperature constant—is one of the physiological requirements of the body. If the internal body temperature gets too hot, then it can shut down fairly quickly. Similarly, if you're exercising in an environment that's colder, it may be difficult for you to get into the right body temperature to compete at your best. Typically you want to be a little bit warmer than resting body temperature. Your body works better if you're warm." A 20-degree day may be perfect for an athlete from a northern country. But, Wells notes that "an athlete used to competing and training in the heat all the time may find that cold, which could make it difficult to get their body to the right temperature."

How athletes' bodies respond to air quality is slightly less individualized. While Toronto air

is far from perfect, last year the city reported zero smog days-2015 appears to be following the same trend. According to Wells, this is will serve as a near-universal benefit for Pan Am athletes. "Any time there is clean air, it allows athletes to reach their potential more easily. When there are lot pollutants or lots of volatile organic compounds or airway irritants, it can be very damaging to the human body. If you're able to compete in an environment where there's no smog, that's a huge benefit." And while Toronto still grapples with pollution, we're a much more favourable environment than Beijing, for example, where the government shut down industrial plants and told people not to drive to try to clean the air before the 2008 Olympics.

High-calibre athletes are always adapting their training and competition regimes to adapt to new places. With Toronto 2015 on the horizon, there are a few things athletes can do to ensure they are prepared, says Wells: adapt their warm-up routine to the climate; precondition their body to be able to perform in the perhaps cooler conditions; create customized hydration and nutrition strategies and modify their equipment. "For example, the colour of gear the athletes wear can impact performance in whether the clothing absorbs or reflects heat. A lot of the tools and technology are geared toward enabling athletes to deal with varying environments better. That's where you see which countries have access to these types of resources and technologies that can help the athletes adapt based on day-to-day conditions."

Observing what athletes are doing to adapt and what technology and equipment they are using to do it make international Games really interesting to observe, says Wells. "Weather and environmental factors play a huge role in the outcome for so many different sports and it can add a layer of appreciation, understanding and awareness to watching these events."



When Dave Ross first started coaching trampoline athletes in the 1970s, sport and science weren't nearly as intertwined as they are now.

"We didn't have nutritionists, sport psychologists, or biomechanists," he says of the days before trampoline became an Olympic sport. "There was no support for the team the way there is now."

But the "scienceminded" Ross-a one-time physics student who manufactures

trampolines in addition to coaching Olympians such as gold medalist and KPE student, Rosie MacLennan—appreciates just how much sports technology has advanced, particularly in the digital age.

Tiny body sensors can now measure muscle activity and motion while athletes train. A "wearable lab" in the form of an instrumented face mask can provide detailed information about heart and lung function in athletes. And a cell phone app can be used to gather real-time data about how stress and emotions affect a team's performance during a game.

All of these technologies were showcased May 12, at the Goldring Centre for High Performance Sport. The event was the Faculty's eighth public symposium – made possible with support from U of T's senior advisor on science and engineering

of movement.

"We now have mobile technology that allows us to look at the human body in a non-invasive way."— Greg Wells

engagement, Professor Molly Shoichet.

More than 650 members of the public seized the opportunity to watch KPE professors demonstrate applications of the latest innovations in sport science, with the help of some of Canada's top athletes. Ross participated in the event alongside MacLennan, who kicked things off with a spectacular trampoline routine for the crowd.

With the help of wheelchair basketball player Flavio Pagliero, Professor Greg Wells demonstrated how the body's systems respond to extreme conditions, including intense physical exertion performed routinely by high performance athletes. Wells outfitted Pagliero with an instrumented face-mask. Via Bluetooth, the device collected data about Pagliero's physiological responses to exercise such as heart rate, oxygen uptake, carbon

> dioxide output, respiratory exchange ratio, breathing rate, tidal volume, minute volume, and velocity

With the data streaming to the huge digital scoreboard above the gym floor, Wells was able to point out the moment Flavio's muscles were likely contracting hard enough to accumulate lactic acid, and show the audience how Pagliero's breathing and heart rate quickened when they cheered him on for a free throw - useful information for athletes and their coaches.



"We now have mobile technology that allows us to look at the human body in a non-invasive way," Wells said. "It can give us real insights into what's happening in competition-like situations."

Next up was Professor Tim Welsh who, with help from a GoPro® camera, demonstrated how MacLennan uses sensory cues to plan and control her actions on the trampoline. As MacLennan flipped some 6 meters in the air, Welsh, whose research focuses on the cognitive and neural mechanisms that people use to achieve their movement goals, described how MacLennan was using visual and vestibular information to make very slight hand and arm movements to ensure a perfect landing and take-off each time.

"To make decisions, Rosie only has 0.3 of a second-about the same time a professional baseball player has to decide whether or not to swing his bat." Welsh said. "Whereas a baseball player only needs to be right 35 per cent of the time to be considered a great hitter, Rosie

needs to be right 100 per cent of the time. That's pretty amazing when you think about it."

Professor Katherine Tamminen demonstrated how a more ubiquitous form of technology is used in her research: the cell phone. Tamminen provided cell phones to wheelchair basketball players Pagliero, Sarah Black and Dani Bigu. The athletes recorded their emotions during the event, using Experience Sampler, an app created by researchers at U of T. The data was then compared to similar observations that had been recorded during the previous week.

"We used to do this [sort of research] using pencils and paper, or with online surveys completed by athletes at home in front of a computer," said Tamminen. "Now, athletes are able to record their experiences quickly, after games and practices. It makes data collection much easier."

Tamminen's work in the Sport and Performance Psychology Lab examines stress, coping, and emotion among high performance athletes. "I'm interested in not only how athletes' emotions influence their functioning and performance," she said, "but also, how those messages are communicated among teammates." Finally, Professor Tyson Beach, whose background is in biomechanics took to the field house floor to show how he uses force and motion measurements to study athletic performance and risk of injury. Beach's team creates mathematical models of the human body: "these help us understand how the movement system functions mechanically - from the standpoints of performance, durability and longevity."

After attaching motion-tracking markers to MacLennan, Beach had her perform a series of drop jumps onto a force plate. The deceptively simple-looking metal square on the floor fed information to a computer and provided readings about the amount of power MacLennan could produce in a simple jump (far more, of course, than a non-Olympian would). Beach and his team use their research to develop assessment tools that can be applied by coaches in training environments.

"This evening's event truly is unique because it brings together something we are all very familiar with - sport - with a world that's unknown to many of us sport science and research," said Master of Ceremonies Tom Harrington of CBC.

"To have an opportunity like this one, in which we bring together athletes, coaches and researchers, for live demonstrations to explore this impact, is amazing."

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Sport science is now a rich and varied field. Scholars spend time studying nutrition and physiology, while others concentrate on the social and psychological sides of athletic experience.

But because the terrain is so diverse, specialists in one area risk missing out on developments in another. In April, the Pan American Sport and Exercise Research Summit (Pan Ex) in Toronto gave academics from around the world a rare chance to come together to look at the world of physical activity from every possible angle: physical, psychological and social.

"The multidisciplinary approach is a reflection of what sport really is - a conglomerate," said Dean Ira Jacobs, head of the PanEx 2015 programming committee.

"Sometimes the best new ideas emerge from a meeting of minds, all of whom have different lenses through which they can look at something."

Timed to coincide with preparations for the Toronto 2015 Pan Am and Parapan Am Games, the conference was an initiative of the University of Toronto and jointly organized with Brock, McMaster and York universities. The schools each offer academic degrees in kinesiology and/or physical education, and all are in cities that will host competition venues during the Games. Some 30 speakers from Australia, Brazil, the United Kingdom, United States, and Canada shared findings

and discussed sport and exercise research and policy issues across an array of topics.

The conference's nine panels covered training and diet, multiculturalism and international development, motivation and sports medicine.

Professor Michael Atkinson coordinated a panel on athletes and identity. The panel looked at the question from "three radically different perspectives," said Atkinson. "But we all looked at groups who are very vulnerable in sport." Atkinson spoke about parental abuse in youth sport, while colleagues from the U.S. and England addressed sex testing and disability.

Atkinson also moderated the closing day's more informal Café Scientifique. "The Social Sciences and Humanities Research Council provided funding to bring in speakers who could speak specifically about the sociocultural impact of sport, including the effects on society of hosting a large international sporting event," said Jacobs.

By sharing information at conferences such as this, Atkinson said, academics will be in a better position to advise and influence policy-makers in a way that will augment the beneficial impacts of sport.

Another conference highlight was the keynote address by Professor Rodrigo Reis of Brazil. Reis spoke about how differently sport and exercise are viewed across countries and

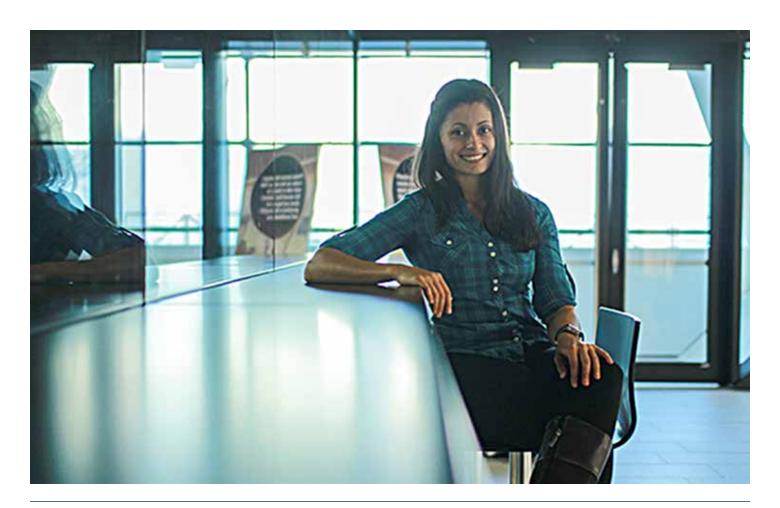
cultures, including his own. In Brazil, for example, afterschool programs are funded by government, and sport is an article in the nation's constitution. Cultural support (and not just native talent) can be a big determinant of success at something like the Pan Am Games and yet the role of culture in creating athletes is not prominent on the radar screen of policy makers in many countries.

Jacobs described the PanEx Summit as a "multi-disciplinary trial balloon" to see what can happen when the brightest minds in sport research are able to trade ideas in a common space. Gathering such a diverse group together can be challenging, but worth it, Jacobs pointed out. For the many graduate and undergraduate students of the Faculty who attended PanEx 2015, this was a chance to hear and even meet world experts whose theories and research they have studied in the classroom.

And though PanEx 2015 was timed to occur in the year of the Games, Atkinson also believes the time has come for more frequent gatherings of this type.

"Our own Faculty is very eclectic", he said. "Sport is a complicated space and that requires complicated research. We'd like to encourage people to come together regularly, and have the conversations they haven't been having."

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### **Examining the Iranian-Canadian experience**

PhD student Bahar Tajrobehkar wants to know how recentlyimmigrated Iranian teenaged girls are adjusting to life in Canada, particularly when it comes to physical education and activity.

Tajrobehkar's research involves critically examining the experiences of newly immigrated Iranian female adolescents, their perceptions of physical education in the Canadian school system, and the multiple forms of barriers and opportunities they may face during their transition. She does this through examining the intersections of gender, culture, social class and bio pedagogical discourses.

"As an Iranian female who immigrated to Canada at the age of 13, I am familiar with the countless obstacles and difficulties that arriving in a foreign land can bring about," says Tajrobehkar. "My own experiences have not only instilled in me a strong sense of sympathy and compassion for the struggles of newcomers in Canada, but they also have made me realize the importance of hearing these experiences and retelling the stories."

No studies currently exist on students who have experienced sexsegregation education and then transitioned to a different physical education system. Tajrobehkar says that given the roles that ethnic background, immigrant status and gender play in participation in the Canadian physical education system, there is a need for research in this area.

Every year, a large number of women immigrate to Canada from Middle Eastern and Asian countries, so Tajrobehkar's proposed research can have immediate policy and curriculum relevance for the officials working in the Canadian education system. Tajrobehkar's research will also be one of the first of its kind to examine the transition between sex-segregated to co-ed physical education.

"I hope that my research will provide valuable insight into the circumstances of young female immigrants," she says.

Tajrobehkar also wants her research to shine a spotlight on the broader sociopolitical factors that influence the experiences of Canadian newcomers, thus working towards a more inclusive and just Canadian system and society.

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### Mind Matters symposium

### From concussion to recovery









On May 27, the Faculty of Kinesiology and Physical Education hosted its seventh public research symposium, Mind Matters: From concussion to recovery. The discussion brought a panel of experts to U of T's Isabel Bader Theatre to discuss the physiology, treatment, psychological effects and professional policy surrounding concussions in sport.

Over 350 guests attended the public event, hosted by Dan Berlin of TSN radio's Inside the Lines, and the discussion served as a platform for U of T researchers to present the latest findings on traumatic brain injury and recovery.

Don Fehr, executive director of the NHL Players' Association (NHLPA), delivered a keynote address about the importance of education as one of the most critical tools for professional athletes. He shared that the NHLPA holds regular workshops for players led by health-care professionals, the goal of which is to raise awareness about the signs, symptoms, and treatment options available.

"When dealing with concussion, you must factor in science, medicine and politics into decision-making," said Fehr. "My job is to make the players aware of everything they need to know in order for them to make the best possible decisions about their health."

Professor Doug Richards discussed the physiology of concussion.

"The term concussion is an umbrella that covers multiple slightly different injuries," he said. "And different injuries beg for different treatments." Richards went on to define the injury, and explained why no two concussions are alike.

Professor Michael Hutchison addressed the question of whether exercise should be considered as part of treatment following a concussion. While traditional treatments have emphasized rest and abstaining from physical activity until symptoms subside, Hutchison's research has found that structured exercise early in the recovery process may actually improve outcomes.

KPE faculty member and clinical

neuropsychologist, Dr. Paul Comper, went on to explain how the complexities of brain injuries make it difficult to take a uniform, "one-size-fits-all" approach to treatment and recovery.

Professor Lynda Mainwaring concluded the formal presentations with a discussion of the often-overlooked emotional consequences of concussion.

As the evening wrapped up, the importance of individualized treatment plans was clear, as was the need for sport culture to continue to evolve so that concussion avoidance is viewed as a top priority for players and caregivers alike.

"We need to stop hitting our heads," said Richards. "The 'cure' for concussions is not in sight, so we need to take steps to prevent them."

#### Originally published in *Pursuit* Fall 2014 by **Adrienne Harry**

Pictured left to right: Don Fehr, Lynda Mainwaring, Doug Richards

PHOTO/ JING-LING KAO-BESERVE



Inspiring busy, often stressed-out, students to add physical activity to their agendas can be a challenge. But according to a paper published in the March issue of the Journal of American College Health and the findings of master's student Alicia Luciani, University of Toronto's tricampus, multi-platform MoveU campaign is making headway.

Led by Professor Guy Faulkner (CIHR-PHAC Chair in Applied Public Health), researchers from the Faculty, have been assessing the campaign's progress since it launched in 2012. The team measured awareness of the campaign by including questions about MoveU and physical activity-related goals in the 2013 National College Health Assessment survey. Of 2,784 U of T students surveyed, 36 percent said they were familiar with the MoveU campaign. The researchers found that the target audience—first-year females—were most likely to know about the social marketing campaign and that those who were aware of the campaign were also more likely to say that they intended to get more active and actually engage in physical activity.

Luciani, who defended her thesis in March, under the supervision of Faulkner, analyzed the social media component of the MoveU campaign, focusing primarily

on Facebook and the role that social media can play in inspiring physical activity. While social media is often associated with sedentary behaviour, Luciani says the target audience has their phones with them all the time and that it's actually the best way to connect with these students. "Social networking sites are a useful tool for health promotion and physical activity promotion, no doubt about it," she says.

According to Luciani's research, Facebook has been especially valuable for promoting MoveU events. "Students in our focus groups were interested in seeing photos from past events; it seemed to inspire them to want to go to future events." Another effective approach is to reach students using methods that suit social media. "Our analytics research determined that posts that used humour and pop culture references scored highest," Luciani explains. "We also found students like quick facts and tips on how to get active. The most popular of all the posts was a motivational, funny meme featuring [actor] Ryan Gosling."

Michelle Brownrigg, KPE's director of physical activity and equity, spearheaded the campaign and says that including this academic analysis of MoveU has ensured that organizers can make informed decisions about how MoveU develops and connects with students. "This research is also an excellent example of how we can reap the benefits of being a part of this integrated Faculty," Brownrigg explains.

Because the campaign is still new, Faulkner emphasizes the importance of revisiting these baseline findings in a couple of years to ensure that awareness continues to increase. Faulkner also advises that MoveU messaging gain more of a presence in the classroom. "I think it's important to get peer leaders right into the big lecture halls and to create stronger connections with other faculties to help make that happen."

The success of the award-winning campaign has already garnered attention from other universities and academic institutions. Two years ago, Sheridan College adopted and customized the campaign for their students. "It would be great if the work that went into developing MoveU was picked up by other schools and used as a basis for developing their own home grown initiatives," says Faulkner. "I believe that the MoveU messaging and brand would resonate at any Canadian university or college."

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# Undergraduate research: is sport really "just a game"?

In sport, dealing with loss is inevitable. Even the most accomplished athlete will have off days. But how difficult is it for an athlete to shake off the agony of defeat? Fourth-year kinesiology student Zoe Poucher asks this question in her current research on athletic identity and contingent self-worth.

"There's been a lot of research on how an athletes begin to define themselves by their sport, but little study on how performance is tied to self-worth," says Poucher. "How does winning or losing affect an athlete's overall confidence? How are their social relationships impacted? My research looks at the psychological effects of sport outside of the sport itself."

Poucher, a former track and field athlete. became interested in this subject after taking a stress and coping class with her supervisor, Professor Katherine Tamminen.

"I started volunteering in Dr. Tamminen's lab and was exposed to more and more research in sport psychology," says Poucher. "I noticed there was a gap in the literature when it came to how confidence is affected by a win or a loss. I thought it would be really interesting to examine."

In her study, Poucher has been interviewing five athletes who represent a variety of sports and varying degrees of athletic success. All of the study's

participants have received national accolades during their careers and some have their sights set on Olympic gold. So far, Poucher's findings indicate that athletic performance is strongly tied to feelings of self-worth.

"All of the participants have said that their self-esteem and self-worth are highly dependent on athletic achievements," says Poucher. "Some participants purposely link one with the other, while others view it as a burden."

Poucher has also found that multiple instances of high-level success in an athlete's career seem to offset the negative impact of one or two losses.

"I've asked participants about successes as well as failures. They all have many positive stories to tell and I find that their negative experiences aren't as impactful because overall, they are very successful."

Poucher presented her findings at Faculty of Kinesiology and Physical Education's 16th Annual Bertha Rosenstadt National Undergraduate Research Conference on March 27. The multidisciplinary conference brought undergraduate students from all over Canada together to discuss their research and share ideas with their peers. But the conference is just the beginning—Poucher wants to delve deeper into this research as a graduate student.

She hopes to explore the impact of more grave instances of perceived failure.

"In the future, I'd like to look at what happens to athletes who sustain careerending injuries," says Poucher. "I also want to examine how retired athletes redefine themselves after their sporting careers end. How do they make that unexpected transition from athlete to non-athlete?"

Varsity Blues Track and Field head coach Carl Georgevski believes that coaches can ultimately put research like Poucher's to good use when developing training strategies. "Sport psychology research teaches coaches how to connect with athletes as people," says Georgevski. "As coaches, we are not training a 'football player' or a 'sprinter', but rather, a person. And if you look after the person, the performance results take care of themselves."

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PHOTO/ MARTIN BAZYI



PURSUIT: Tell us about the Rise @ Work program

JANINE OMRAN: Rise @ Work is a web-based intervention designed for people in the workplace. Participants are given a pedometer, create an online account and monitor their steps daily for 11 weeks. Throughout the program, they are exposed to different evidence-based strategies that we know will help increase and maintain physical activity and reduce sedentary behaviour.

#### **P:** What is the harm in sitting? Is it really as bad as they say?

JO: Sitting has a detrimental effect on mental and physical health and increases risk for chronic diseases. The workplace is a breeding space for sitting time. Between sitting during the commute to and from the office and sitting in front of a workstation, many people sit for seven to eight hours at a time. There is evidence suggesting that taking a break every 30 minutes has health benefits. A really cool feature of the Rise @ Work program is the "Take a Stand" app, which reminds participants to take a break and stand up every 30 minutes.

#### P: What are some ways to reduce sitting time without disrupting work?

**JO:** Try to sneak standing or walking into your day. For instance, take a walking meeting instead of a sitting meeting. Instead of sending an email, take a walk to or with the person you're trying to reach. Use a standing desk at your workstation.

#### P: How can employers encourage a more physical work environment?

JO: There's a lot of research on the effects of physical activity and employee absenteeism. Workplaces that incorporate physical activity into their structure, with employee gym memberships, for instance, have reduced absenteeism. Challenge the idea that we need to be sitting to be focused. There is a stigma that you can't really stand up during meetings, or that too much movement is distracting. Take that away! Encourage colleagues to move around. Give them access tools like the "Take a Stand" app. Build movement into the work environment; that would definitely help

#### P: What if I'm simply too busy to head to the gym?

JO: What we're trying to do with the Rise @ Work program is simply reduce sitting time. When you tell somebody "we want you to increase your physical activity to 150 minutes per week," the typical reaction is "oh, I can't do that!" It seems like a daunting task. But when you set a more modest goal, like reducing your sitting time a little each day, it seems like a more feasible option.

Each person is different and has a different schedule. Create an action plan that works for you, like getting off the bus a stop earlier, or riding your bike to work rather than taking the bus. Action planning is a significant predictor of increasing steps. Planning small adjustments will keep you up and active!

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PHOTO/JOHN HRYNIUK



Seven FIFA officials were arrested May 27, accused of "rampant, systematic and deeprooted corruption"—and that's good news say experts at the Faculty of Kinesiology and Physical Education.

Calling it a "a good day for sport," Professor Bruce Kidd says he hopes FIFA's longserving president, Sepp Blatter, will step down.

Professor Peter Donnelly, director of The Centre for Sport Policy Studies, welcomed the arrests, but pointed out they were a long time coming. "I felt relief that it has finally started to happen and frustration that it has taken so long to see action on this," says Donnelly. "Those who follow these matters have known about these issues for at least 12-15 years."

The Centre for Sport Policy Studies has been casting a critical eye on FIFA and international sports organizations for years, pushing for more transparency and democracy. In 2011, Kidd and Donnelly helped to craft the final draft of The Cologne Consensus—a major call for good governance in sport.

Below, Donnelly weighs in on what this latest scandal means for the federation, its current top brass and the future of the World Cup.

We're at 14 indictments – nine FIFA officials and five sports marketers – so far. Will we see more charges and more arrests?o you think it could lead to more charges and more arrests beyond these individuals?

I think that's highly likely; there are other ongoing investigations (I understand that the FBI has been holding the son of Jack Warner, a committee member from Trinidad and Tobago, for some time and that he has been talking in ways that probably -along with the paper trailscontributed to these arrests). There is also the ongoing Swiss investigation, and it will probably be empowered now that action has finally been taken. It is also highly likely that those arrested will use their insider information to point the finger at others as a pleas bargain for their own position. The boss is still in place. Sepp Blatter is on the arrest wish list of everyone I know who has been following FIFA misconduct.

These individuals include Warner, Vice-President Jeffrey Webb, and the current and former heads of the FIFA regional association for North America, Central America and the Caribbean, as well as FIFA officials connected to the South American regional association. What does it mean that such highly ranked officials were charged?

I'm not sure about Webb, but Jack Warner's misconduct has been reported on for years; his actions were so blatant that he was forced to resign as head of CONCACAF (The Confederation of North, Central America and Caribbean Association Football) several years ago. The fact that such highly-ranked officials have been charged may help to bring charges against others above and below them in the FIFA hierarchy, and against those hangers-on who have been involved in, for example, ticket-selling scams for World Cup events.

These \$150 million in commercial bribes are being traced back to the 1990s. Have critics suspected this misconduct has been happening for so long?

Critics haven't just suspected, they've known about this for years through the work of libel-proof investigative journalists. In 2006, Andrew Jennings published a book titled Foul!: The Secret World of FIFA: Bribes, Vote Rigging and Ticket Scandals. The book summarized evidence that he had been collecting and publishing in various sources for several years before 2006. In 2005, FIFA attempted to block publication of the book and they have made several libel threats since then; but Jennings' work, and his subsequent research appears to be bullet proof and provides clear evidence of corrupt practices. His work has stimulated other journalists to investigate FIFA, and their work has probably contributed in a significant way (along with the paper trail) to the current investigations an arrests.

There are accusations of misconduct related to the awarding of the next two World Cup events in Qatar and Russia. What could this mean for these tournaments?

At the very least I hope it will mean that the conditions of labourers constructing the facilities in both countries will improve significantly, and that there will be significant improvements to the World Cup bidding process. I'm not sure that the World Cups could be withdrawn from Russia and Qatar, or that bidding could be re-opened; there may be too many legal contracts already in place as a result of what may be revealed as an illegal process. Other benefits may be that both future World Cups would be exposed to a great deal more scrutiny, making it difficult for past nefarious practices (e.g., ticket scams) to occur.

How might this latest turn impact the FIFA women's world cup coming to Canada this summer?

I don't think that it will have any direct impact on the players or the Games. It should shed more light on the Canadian Soccer Association who quietly remained a member of FIFA and CONCACAF all during these years of reported corruption, and whose president - it has been reported - may vote (again?) for Blatter in the election this weekend. And it will certainly shine a media spotlight on this World Cup – which will probably command even more attention than it might have. That spotlight will also focus on any FIFA officials who attend. Try to imagine the reaction of the media, the spectators, and the players if Sepp Blatter shows up at the Opening Ceremonies (if they let him out of Switzerland) or tries to present the Cup to the winning team. The players have particular reason to feel resentful: FIFA denied an appeal by many players to have their World Cup games played on grass (as is required for the men's teams) rather than artificial turf; and several years ago, Blatter advised women players that they would attract larger audiences to their games if they wore shorter shorts!

What could this development mean for the future of FIFA? What lesson does it deliver to other major sports organizations, like the IOC?

Maybe we will finally see FIFA becoming a more open, transparent and democratic organization. It should be remembered that the millions of dollars that have been taken in bribes, or in return for votes, or through other illegal means, was money intended for the development of football, especially in low income countries. I hope that the arrests will also motivate other major international sport organizations to become more open, transparent and democratic and that it will empower governments and anti-corruption NGOs to begin to seriously challenge the unregulated autonomy of international sports and to begin to implement appropriate regulations requiring good governance practices.

Originally published online, May 2015 by Valerie lancovich



### Moving for mental health

Graduate student Mehala Subramanieapillai is taking an active approach to mental health.

Working with the Mental Health and Physical Activity Research Centre (MPARC) at the Faculty of Kinesiology and Physical Education, Subramanieapillai's research includes investigating how physical activity interventions can be used to support those living with serious mental illnesses through a specific study on schizophrenia

The study involves multiple patients with schizophrenia. The participants take part in one of two activities – 20 minutes of moderate physical activity, or sitting passively for the same amount of time. Subramanieapillai then measures changes in the participant's executive function and asks each person to return a week later to complete the other activity.

Subramanieaphillai explains that the impairment of cognitive functions (mental processes such as planning, reasoning and problem solving) is the core feature of schizophrenia. And while this impairment reduces a person's capacity to actively participate independently within society, it also improves rapidly with moderate physical activity.

"While physical exercise for mental illness may be a common notion," says Subramanieaphillai, "it is one that is often overlooked. That's why I was motivated to focus my research on this topic."

Subramanieaphillai's study will be the first (pilot study) to examine whether physical activity has as significant effect on people living with schizophrenia. She hopes that her research will also contribute to the evidence supporting greater integration of physical activity into mental health care services.

Originally published online, November 2014 by Rochelle Coelho



## Revealing Rio the other side of the World Cup

When Amanda De Lisio began her graduate studies in the Faculty of Kinesiology and Physical Education at U of T, she had no idea that she'd be flying to Brazil to chat with sex workers on the streets of Rio at three in the morning. But often, it's the most unexpected journey that becomes the most rewarding.

De Lisio came to U of T to research the effects of mega-events on their host communities. Her goal was to investigate the discourse surrounding these events, and how the economy and population were affected. What she found, however, was a lot of corporate-speak.

"I started to get less interested in what planners had to say because it seemed very disingenuous," she says. "Just the same rhetoric I would have been able to read off a city councillor's website."

And while she did find plenty of evidence of an entrepreneurial spirit surrounding these large-scale sporting events, it was mostly attributed to established businessmen. In other words, there were very clear winners and losers – the losers being those in the lower-income sector of the community.

That's when her focus changed to what De Lisio refers to as the "informal economy". If formal businesses thought they could thrive during a mega-event, did that suggest the underground economy would do the same?

Knowing that Brazil was a hot spot for mega-events, De Lisio presented at a conference that was being held in Rio de Janiero around the time of the 2014 World

Cup. Her focus on the informal economy sex work in particular – attracted some attention.

So, with funding from the MITACS Globalink travel grant, De Lisio flew down to Brazil to dive deeper into the informal economy on the streets of Rio.

"I started to collaborate with an anthropologist in Brazil, Thaddeus Blanchette, who's very well known for his work on sex work in Rio de Janeiro," she says.

With the World Cup on the horizon, Blanchette and his colleagues were very interested in De Lisio's previous research on mega-events and offered invaluable insight on the sex trade in return.

De Lisio, together with the research team Blanchette assembled, frequented tourist areas like Copacabana and Ipanema that were teeming with those looking for - and selling - sex. But was business booming? Good question. With many of the formal businesses in the downtown sector temporarily closing during the World Cup, women from that area of Rio migrated to the tourist areas, meaning competition was fierce and work was confined to a more concentrated area. The general consensus was that the World Cup was no Carnival.

In addition to examining the relationship between informal economies and the sport mega-event,

De Lisio is also interested in maintaining a commitment to the broader human rights issues associated with this research.

"Sex is such a minor part of the job," she says. "As much as people might consider this work repugnant, I've learned so much about being empathetic, compassionate and tolerant of another human being."

It's the drive to learn more that's fuelling the rest of De Lisio's research. While she

helps to analyze the data she collected with Blanchette's research team, she's continuing to take Portuguese lessons and keeping up with the friendships she made while in Rio. She hopes that this research will help to tell the stories that are often excluded

from urban redevelopment schemes and mega-event planning.

"That's just the reality of doing this type of work," she says. "How do you have a connection with someone, use their story as part of your dissertation and then just walk away?"

Originally published in **Pursuit** Fall 2015 by Sarah Ryeland





# **Dr. Roy Shephard** invested into the Order of Canada

On September 24, Dr. Roy Shephard, professor emeritus of applied physiology at the University of Toronto, was invested into the Order of Canada in a private ceremony in Squamish, B.C.

Known as a trailblazer in the field of physiology and exercise sciences, Shephard inspired legions of students and faculty over his 34-year career at U of T and continues to be one of the most respected voices in the field.

Thanks to former colleague Art Salmon and those who quietly assisted with the nomination, Shephard had no idea he had been nominated for the Order of Canada – let alone appointed – until he checked the mail one day last spring. And while the honour seemed natural and well-deserved to his family, friends and colleagues, Shephard admits that to him, the announcement came as a bit of a shock.

"It was a great surprise and I was certainly very honoured," he says.

Shephard began his work at U of T in 1964, having been hired to work in one of three Canadian labs created after Bill-C131 (designed to promote high performance sport and participation in sport and physical activity) was passed in the House of Commons. Originally appointed to Applied Physiology in the School of Physical and Health Education and Department of Preventive Medicine and Biostatistics (Faculty of Medicine), Shephard's work eventually led to the creation of Canada's first doctoral program in exercise physiology.

And that's just the tip of the iceberg. From 1964-1985, Shephard was Director of the Graduate Program in Exercise Sciences. In 1979, he began his 12-year term as Director of the University of Toronto's School of Physical and Health Education.

"Dr. Shephard mentored and inspired many who have gone on to national and international research and academic leadership positions, including a number of individuals who are leading our faculty today," says Ira Jacobs, Dean of the Faculty of Kinesiology and Physical Education. "He is an amazingly eclectic, creative and productive trailblazer in our field with an ability second-to-none to identify the potential for knowledge from diverse fields to be integrated to advance exercise sciences, and then to effectively communicate that integration. The Order of Canada is an incredible honour and Dr. Shephard is most deserving of this prestigious award."

Now living in Brackendale, B.C., Shephard continues to break new ground in the field.

"I'm still writing," he says. "This summer I completed two books – one on the history of physical activity and health, and one of the effects of Ramadan on athletes. They'll be published sometime in the next year, I imagine."

In the meantime – and in between research studies – Shephard will continue to tend to his thriving garden, enjoy his daily 5-km walks and spend time with his family who helped him celebrate his Order of Canada appointment with a party in July.

Lieutenant Governor of British Columbia, Judith Guichon stands with

Dr. Roy Shephard and his wife Muriel, daughter Rachel and the mayor

of Squamish, Rob Kirkham.

Although he was unable to travel to Ottawa to receive his award, the party and ceremony near his home were incredibly meaningful to Shephard.

"Obviously there's a certain cachet to meeting the Governor General in Ottawa," he says, "but in a way, it's much nicer to have the ceremony in your own town where you can share the excitement with your friends."

Shephard is quick to thank Art Salmon, too.

"Certainly I would like to thank him for his generosity in nominating me because really he did the bulk of the work on which they based the award. He's a very modest and retiring person. He did a lot behind the scenes, particularly with the big conferences we had."

What it all comes down to, however, is Shephard's undeniable contribution to the field.

"Roy Shephard is a luminary in the realm of exercise science," says the Office of the Secretary to the Governor General. "Through his extensive research, he has helped further our understanding of the need for physical activity, particularly for those living with chronic disease and disability. His work is manifest in government health and amateur sport policies, as well as in the establishment of clinical exercise rehabilitation programs across Canada." - SR

For more information about the Order of Canada, visit www.gg.ca/honours.

Originally published in **Pursuit** Fall 2015 by Sarah Ryeland



In September, Dean Ira Jacobs and 14 others were honoured at a ceremony in Texas

### Dean Jacobs receives top honour

In September, Professor Ira Jacobs, dean of the Faculty of Kinesiology and Physical Education, was inducted into the US National Academy of Kinesiology. Recognized at a special banquet and ceremony, Jacobs joined 14 other outstanding scholars who were named Fellows of the Academy at its 84th annual meeting in Austin, Texas.

"Being named a Fellow of the US Academy is an incredible honour. To be included among those who have made important contributions to kinesiology academic and scientific disciplines is very motivating and gratifying," says Jacobs. "Our faculty has been recognized in previous years with Professors Peter Donnelly, Bruce Kidd and Margaret MacNeill all being named as Fellows and I'm proud to join them. I thank the Academy for this recognition."

The US National Academy of Kinesiology is an organization that promotes the study and application of the art and science of human movement. Composed of highly-respected researchers and kinesiologists who have made significant contributions to the field through scholarship and professional service, the Academy's Fellows reflect a "who's who" of eminent scholars in the field. - SR

For more information on the US National Academy of Kinesiology, visit www. nationalacademyofkinesiology.org

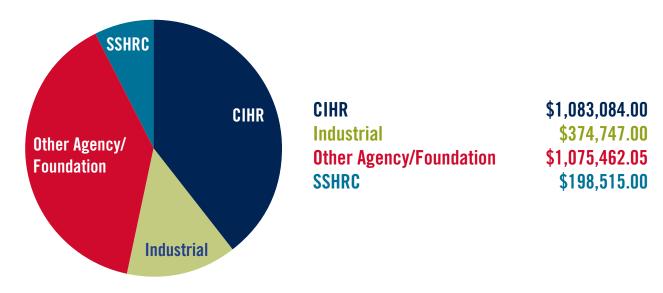
Originally published in *Pursuit* Fall 2015 by Sarah Ryeland

### **KPE RESEARCH FUNDING AWARDED — 2014-2015**

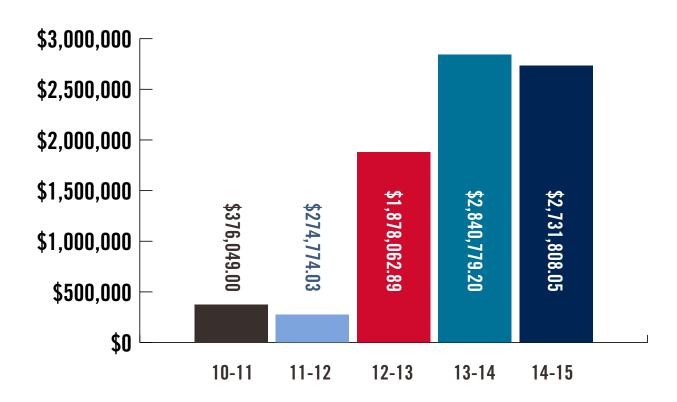
Investigators	Sponsor	Program	Title of Research Project	Awarded
K Arbour-Nicitopoulos	Connaught	New Researcher Award	Igniting fitness possibilities: A pilot study to develop and test the feasibility of a community-based inclusive physical activity program for youth	\$46,494.00
K Arbour-Nicitopoulos Co-Pl's: KA Martin Ginis	McMaster University	HRSDC Subgrant	Development, implementation, and assessment of the Active Living Peer Mentorship Program for persons with physical disabilities	\$7,563.00
K Arbour-Nicitopoulos Co-Pl's: J Leo, G Faulkner, R Bassett-Gunter	SSHRC	SSHRC Institutional Grant	The Physical Activity Monitoring Study: A pilot study examining the feasibility and validity of community-based physical activity measurement in children and youth with mobility impairments	\$1,792.00
K Arbour-Nicitopoulos Co-Pl's: V Wright, G Faulkner, AC McPherson, S Wood	SSHRC	Insight Development Grant	Exploring the acceptability of inclusive recreational sports programs for preadolescent children with physical disabilities	\$74,133.00
M Atkinson	SSHRC	University of Toronto Excellence Award - SSHRC	Students without borders: Human movement and the basis of Waldorf education	\$6,000.00
M Atkinson Co-PI: P Donnelly,	SSHRC	Connection Grant	2015 Pan American Sport and Exercise Research Summit	\$25,000.00
T Beach	Canadian Sport Institute - Ontario	Internship	Lindsay Musalem - MSc - Uncovering differences between novice and elite sprinters via novel biomechanical analyses of sprint starts	\$15,000.00
S Darnell Co-Pl's: R Giulianotti, D Howe	Loughborough University	Economic and Social Research Council Subgrant	Sport for a better world? A social scientific investigation of the sport for development and peace sector	\$67,792.40
P Donnelly	SSHRC	SSHRC Institutional Grant	An analysis of procurement policies in Canadian sport organizations	\$1,792.00
G Faulkner	Canadian Cancer Society Research Institute	Travel Grant	Linda Trinh - Postdoctoral Fellow - To attend 36th annual Meeting & Scientific Sessions of the Society of Behavioral Medicine	\$2,000.00
G Faulkner	CIHR	Chair in Applied Public Health	Active Canada 20/20: Evaluating a population approach to reducing physical inactivity in Canada	\$914,028.00
G Faulkner	Green Communities Canada	Operating Grant	A cost-benefit of school travel planning in Ontario	\$35,000.00
G Faulkner	Kidney Cancer Research Network of Canada	Research Trainee Award	Linda Trinh - Posdoctoral Fellow - Development and assessment of a physical activity and sedentary behaviour guidebook for kidney cancer survivors	\$15,000.00
G Faulkner	MITACS and ParticipACTION	ACCELERATE Ontario Internship	Lauren White - MSc - Evaluation of national physical activity initiatives	\$15,000.00
C Fusco	MITACS	Globalink Travel Grant	Amanda De Lisio - PhD - Economies of deviance: sex work and the sport mega-event	\$5,000.00

Investigators	Sponsor	Program	Title of Research Project	Awarded
J Goodman	CIHR	Postdoctoral Fellowship	Laura Banks - Postdoctoral Fellow - Cardiac consequences of excessive exercise	\$163,056.00
M Hutchison	Military and Veteran	Research Contract	Understanding concussion: From injury to return-to-action	\$106,593.95
G Kerr Co-Pl: A Stirling	Higher Education Quality Council of Ontario	Research Contract	Providing high-quality work integrated learning opportunities in Ontario colleges and universities: Toolkit develppment and evaluation	\$68,218.70
B Kidd	SSHRC	Connection Grant	Historicizing the Pan American Games	\$11,391.00
D Moore Co-Pl: H Kato	Ajinomoto Co., Inc.	Research Contract	Evaluation of protein requirements in endurance athletes	\$100,802.00
C Sabiston	CIHR	Canada Graduate Scholarships - Doctoral - Michael Smith Foreign Study Supplement	Jason Lacombe - PhD - Risk factors for fracture at less commonly studied fracture sites in postmenopausal women	\$6,000.00
C Sabiston	Canada Research Chair	CRC Tier II	Canada Research Chair in Physical Activity and Mental Health	\$500,000.00
C Sabiston	SSHRC	SSHRC Institutional Grant	Examining youth sport participation characteristics & associations to mental health over time	\$1,792.00
K Tamminen	Connaught	New Researcher Award	Testing a parent-child coping intervention for adolescent athletes	\$10,000.00
K Tamminen	SSHRC	SSHRC Institutional Grant	Parent and child sport conversations	\$1,792.00
K Tamminen Co-Pl's: C Sabiston, M Eys, BM Smith, PRE Crocker	SSHRC	Insight Development Grant	Exploring communal coping and collective emotions in team sports	\$74,823.00
G Wells	Movember Canada	Men's Health & Wellbeing Innovation Challenge Grant	The Health Oracle App: Predicting health and guiding action	\$147,300.00
G Wells	Toronto Musculoskeletal Centre	Scholarship	Sarah West - Postdoctoral Fellow - The pathophysiology of exercise intolerance in children	\$14,500.00
G Wells	College of Massage Therapists	Massage Therapy Research Fund	The effect of massage therapy on inflammatory mediatros in skeletal muscle employed at rest and following high-intensity intermittent sprint exercise	\$20,000.00

# 2014-2015 Research Funding by Sponsor Type



# Research Funding by Year (Apr-Mar) Awarded



## **PUBLICATIONS (2014-2015)**

## sorted alphabetically by first listed KPE faculty member

#### Books

Frost, D. M. (2015). The IAFF/IAFC Wellness Fitness Initiative's Peer Fitness Trainer Workbook. International Association of Fire Fighters.

Shephard, R. J. (2014). Studies in history and philosophy of science. An illustrated history of health and fitness, from pre-history to our postmodern world. New York: Springer.

Bouhlel, E. and **Shephard, R. J.** (2015). Optimizing physical performance during fasting and dietary restriction: implications for athletes and sports medicine. Boca Raton, FL., CRC Press.

Shephard, R. J., and Tudor-Locke, C. (2015). The objective monitoring of physical activity: Contributions of accelerometry to epidemiology, exercise science and rehabilitation. New York: Springer.

Taylor, D. B. (2014). Writing Skills in Nursing and Healthcare: A guide to completing successful dissertations and theses. London: Sage Publications.

Wells, G. D. Ph.D. The Performance Code. Harper Collins.

### **Book Chapters**

Atkinson, M. & De Lisio, A. (2014). Mega Events, Sport Legacies and Sociologically Informed Impact Assessment. In C. Okada and K. Young (Eds), Sport, Social Development and Peace. London: Elsevier.

Atkinson, M. & Gibson, K. (2014). Communion Without Collision: Animals, Sport and Interspecies Co-Presence. In M. Gilbert and J. Gillett (Eds), Sport, Animals and Society. NewYork: Routledge.

Atkinson, M. Fell Running and Being on One's Own. In I. Wellard (Ed), Researching Embodied Sport. London: Routledge. (Accepted)

Atkinson, M. Exercising. In D. Waskul and P. Vannini (Eds), Popular Culture as Everyday Life. London: Ashgate. (Accepted)

Atkinson, M. Ethnography. In. B. Smith and A. Sparkes (Eds), International Handbook of Qualitative Methods in Sport and Exercise. London: Routledge. (Accepted)

**Atkinson, M.** Power and Power Relations. In D. Andrews, M. Silk, and H. Thorpe (Eds), Routledge Handbook of Physical Cultural Studies. London: Routledge. (Accepted)

ReisNothen, G., & Atkinson, M. Adorable, Powerful, Conquered: Notes on Non-human Animals as Sports Mascots in North America. In J. Schatz and A. George (Eds), Screening the Non/Human: Animal Representations in Visual Media. Lanham: Lexington Books. (Accepted)

#### Darnell, S. C. & Millington, R.

Modernization, Neoliberalism and Sports Mega-events: Evolving Discourses in Latin America. In R. Gruneau and J. Horne (Eds), Mega-events and Globalization: Capital, Cultures and Spectacle in a Changing World Order. Routledge. (In Press)

**Darnell, S. C.** Sport in the Community: An Overview and Assessment of 'Sport for Development and Peace.' In: Sharpe, Mair and Yuen (Eds), Community Development: Applications for Leisure, Sport and Tourism. Venture Publishing Inc. (In Press)

Darnell, S. C. & Huish, R. Cuban Sport and the Challenges of South-South Solidarity. In L. Hayhurst, T. Kay and M. Chawansky (Eds), Beyond Sport for Development: Transnational Perspectives on Theory, Policy and Practice. Routledge. (In Press)

Darnell, S. C. Sport, International Development, and Peace. In R. Giulianotti (Ed), The Routledge Handbook of the Sociology of Sport. Routledge. (In Press)

Huish, R., and Darnell, S. C. (2015) Cuban Sport Development: Building Capacity from el Parque to the Podium. In P. Brenner, M. Jimenez, J. Kirk, and W. LeoGrande (Eds), A Contemporary Cuba Reader. Boulder: Rowman and Littlefield Publishers.

Darnell, S. C. (2014) Ethical Challenges and Principal Hurdles in Sport-for-Development Work. In K. Young and C. Okada (Eds), Sport, Social Development and Peace. Emerald Press.

Hayhurst, L, Millington, R., & Darnell, S. C. (2015) Sports Event Management: The Non-governmental Agency Perspective. In M. Parent and J. L. Chappelet (Eds), The Routledge Handbook of Sports Event Management: A Stakeholder Approach. Routledge.

Donnelly, P. (2015). Sport, culture and subcultures. In G. Ritzer (Ed), Wiley-Blackwell Encyclopedia of Sociology (2nd edition). Oxford: Wiley Blackwell. (In Press)

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**Donnelly, P.** (2015). We are Game? Player democratization and the reform of sport governance. In Y. Vanden Auweele, E. Cook & J. Parry (Eds), Ethics and Governance in Sport: The Future in Sport Imagined. London: Routledge. (In Press)

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Faulkner, G. E., Trinh, L., & Arbour-Nicitopoulos, K. P. (2015). Physical Activity and Mental Health. In P. R. E. Crocker (Ed), Sport and Exercise Psychology: A Canadian Perspective, 3rd ed. Toronto, ON. Pearson **Education Canada** 

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Buliung, R., Larsen, K., Hess, P., Faulkner G., Rothman, L., Fusco, C. (2014). Driven to School: Social fears and traffic environments. In A. Walks (Ed), Driving Cities, Driving Inequality, Driving Politics: The Political Economy and Ecology of Automobility. London: Routledge.

- Comper, P. & **Hutchison**, M.G. (2015). Concussion and the college athlete. In R.J Echemendia & G. Iverson (Eds), The Oxford Handbook for Sport-Related Concussion. Oxford: Oxford University Press.
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- Kerr, G., Stirling, A., & MacPherson, E. (2015). Psychological violence in youth sports. In D. Caine & L. Purcell (Eds), Injury in pediatric and adolescent sports: Epidemiology, treatment and prevention. Springer. (In Press)
- Kerr, G., & Stirling, A. (2014). Applying Ecological Systems Theory to the issue of athlete abuse in sport. In R. J. Schinke & K. McGannon (Eds), The psychology of subculture in sport and physical activity: A critical approach. Psychology Press.
- Kidd, B. 'Lawrence Solman', 'Francis Nelson' and 'Jacob Gaudaur'. Dictionary of Canadian Biography, Vol. XVI. Toronto: University of Toronto Press (Forthcoming)
- Kidd, B. 'The army's presence will be obvious': Montreal 1976. In V. Bajc (Ed.), Surveilling and Securing the Olympics: From Tokyo 1964 to London 2012 and Beyond. New York: Palgrave MacMillan. (In Press)
- MacNeill M (2015). Society, Culture and Sport. In P. Klavora (Ed), Foundations of Exercise Science: Studying Human Movement and Health (3rd Edition). Toronto: Kinesiology Books Publisher. (In Press)
- Mainwaring, L. Psychological Factors and Sport Related Concussion. In R. Echemendia and G.L. Iverson (Eds), The Oxford Handbook of Sport-Related Concussion. New York: Oxford University Press. (In Press)
- Sabiston, C.M., Brunet, J. (2015). Body image. In P. R. E. Crocker (Ed) Sport and Exercise Psychology: Canadian Perspective. Toronto, ON: Pearson.
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- Raso, V., & Shephard, R. J. (2015). Chapter 19. Measures of physical function in the management of individuals living with HIV/ AIDS. In R. R. Watson (Ed) Food, Nutrition and Lifestyle in Health of HIV Infected People Volume II. Philadelphia, PA: Elsevier. (In Press)
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- Tremblay, L. & de Grosbois, J. Why encode limb and body displacements in the velocity domain? Neurophysiological and behavioral evidence. In T. Heinen (Ed), Advances in Visual Perception Research. Hauppauge, NY: Nova Science Publishers. (In Press)

## **Peer Reviewed Publications** (2014-2015)

- Moola, F.J., Gardiner, S., & Amara, C. (2015). Speaking on behalf of the body and activity: Investigating the activity experiences of Candian women living with anorexia nervosa. Mental Health and Physical Activity 8:44-55.
- Trinh, L., Arbour-Nicitopoulos, K. P., Sabiston, C. M., Alibhai, S. M. H., Jones, J. M., Berry, S. R., Loblaw, A., & Faulkner, **G. E.** (2015). A qualitative study exploring the perceptions of sedentary behavior in men with prostate cancer on androgen deprivation therapy. Oncology Nursing Forum. (In Press).

- Arbour-Nicitopoulos, K. P., Duncan, M., Remington, G., Cairney, J., & Faulkner, G. E. (2014). Development and reliability testing of a Health Action Process Approach inventory for physical activity participation among individuals with schizophrenia. Frontiers in Psychiatry 5:68.
- Arbour-Nicitopoulos, K. P., Tomasone, J. R., Latimer-Cheung, A. E., & Martin Ginis, K. A. (2014). Get In Motion: An evaluation of the reach and effectiveness of a physical activity telephone counseling service for Canadians living with spinal cord injury. PM & R Journal 6:1088-1096.
- Jachyra, P., Atkinson, M., & Bandiera, G. (2015). Urban Cyclists' Perspectives on Behavior Change: A Qualitative Study. Transportation Research: Traffic Psychology and Behavior (In Press)
- Jachyra, P., Atkinson, M., & Washiya, Y. (2015). "Who are You and What are You Doing Here? Methodological Considerations in Ethnographic Health and Education Research." Ethnography and Education 10(2): 242-261.
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