

FACULTY OF KINESIOLOGY



Community Report 2018/19



UNIVERSITY OF CALGARY

Dean's Message

This was an incredible year for the Faculty of Kinesiology. We were ranked No. 1 in North America and No. 7 globally for schools of movement and sport science (ShanghaiRanking 2018).

A few months later, we were ranked among top 30 in the world – and No. 6 nationally – by Quacquarelli Symonds 2019 World University Rankings for sport-related subjects based on academic reputation and scholarly productivity.

Our faculty continues to work to improve the health and mobility of our society through our world-renowned research and scholarship. We are reducing the burden of concussions in youth sports and received

\$12 million CDN from the National Football League's scientific advisory board for a Kinesiology-led, pan-Canadian research program for a variety of sports, including ice hockey, rugby, football, lacrosse, wrestling, soccer, basketball, volleyball and cheerleading.

In partnership with Université Laval, we developed a free, online course on concussion open to parents, coaches, teachers, school administrators, health-care professionals and those who have experienced a concussion. More than 8,500 people enrolled in this first course.

Cover photo: Athletes demonstrate safe tackling drills during a news conference announcing funding to reduce the burden on concussion in youth.

A portrait of Dr. Penny Werthner, a woman with short, grey hair, wearing a black jacket. She is looking directly at the camera with a slight smile. The background is a dark red with some lighter red geometric shapes.

Our researchers are using novel techniques to tackle the obesity epidemic. They have shown that a prebiotic fibre supplement reduces body fat and alters intestinal microbiota in overweight or obese children.

We also have researchers exploring how we can better structure physical activity environments and train individuals to foster positive social connections through human movement.

With great pleasure, we hosted more than 2,000 experts in the field of biomechanics from around the world at XXVII Congress of

the International Society of Biomechanics. This world congress is an expression of recognition of the outstanding scientific contributions of our faculty members in the field of biomechanics.

I'm proud of the research and education that we provide in our faculty. This 2018/19 Community Report highlights the many ways we influence and impact our community and the world.

Dr. Penny Werthner

Dean, Faculty of Kinesiology



Our students receive high-quality and relevant learning experiences that allow them to follow their passion and make the world a better place.

Be Fit For Life

practicums turn child's play into physical literacy

Nimra Ali encourages children to walk like elephants, scamper like puppies and lope like monkeys. With every movement, the kids at University Child Care Centres (UCCC) are developing physical literacy. *"We teach kids how to move, and introduce some fundamental movement skills into their lives,"* says Ali, a third-year student who did an eight-week practicum at West Campus UCCC.

Ali is one of the first students to take the practicum organized by the **Be Fit for Life Centre**, a not-for-profit dedicated to helping Albertans be more active throughout their lives. *"We decided to try practicum placements to give students in Kinesiology an opportunity to get some practical hands-on experience,"* says **Leah Yardley**, a coordinator at the Be Fit for Life Centre, which is housed in the faculty.

Developing physical literacy — defined as the motivation, confidence, physical competence, knowledge and understanding to value and take

responsibility for engagement in physical activities for life — helps children better understand how their bodies move. Understanding simple movements help children build more complex movement skills.

The child care centres are pleased with the practicums, too. *"We appreciate having that connection with the Kinesiology faculty and having young people coming in to teach the children,"* says **Carol Pizani**, the program director at the University Child Care Centre Society, West Campus. *"I think it's definitely a win/win situation: The children are led in an activity that's going to exercise their bodies and build their muscles and we educate our staff on how to use the gym space with the children."*

MAKING SPORT INCLUSIVE

After graduating with a Kinesiology degree, student leader **Eva Bošnjak** is planning a master's degree, working with Dr. **William Bridel**, to explore how transgender and gender non-conforming people see their bodies. "I want to see how people feel and what their experiences are with sports, and how we can start to break down those gender stereotypes," Bošnjak says.



#MOVETHATMAN

After **Sydney Riglin's** boyfriend died of cancer, she wanted to help other men with cancer stay active. During her practicum at the Thrive Centre with Dr. **Nicole Culos-Reed**, Riglin created the social media campaign #MoveThatMan to encourage support people to share photos of men with cancer working out.



GRADUATE STUDENTS CREATE ADAPTIVE CAMP FOR YOUTH

Two Kinesiology master's students created an adaptive sports camp for youth with disabilities. "I want them to see how much sport can do for them," says **Elysa Sandron**, who planned and evaluated the camp for her master's project.



A group of **Bowness High School** students participated in a dual credit first-year Kinesiology course, Activity: Essence and Experience. The pilot was a great success and will continue.

Drs. **Cari Din** and **Martin MacInnis** are exploring experiential learning after receiving a three-year **Teaching Scholars Grant** to enrich teaching and learning in the Faculty of Kinesiology.

The men's cross-country team won its first **national championship** and Kinesiology student **Russell Pennock**, third in his discipline, helped the Dinos take the overall spot at U Sports



Dinos Kinesiology student **Niki Oudenaarden** won **U Sports Gold** in pentathlon and she was awarded Dr. Dennis Kadatz Athlete of the Year.



Four students graduated from our new five-year **Bachelor of Arts in Dance** and a **Bachelor of Kinesiology** degree program. Twenty students are now enrolled in this one-of-a-kind program in Canada.



Our research makes an impact

We improve the health and mobility of individuals of all ages, from youth to older individuals and from recreational participants to elite athletes, including Olympians.

Improving mobility in people with obesity and osteoarthritis

The obesity epidemic is taking a toll on our bones and joints and is one of the biggest risk factors for developing osteoarthritis (OA). It causes joint instability, muscle weakness, and increases the load on bones and joints. Drs. **Raylene Reimer** and **Walter Herzog**, from the Faculty of Kinesiology, are working with Dr. **David Hart**, from the Cumming School of Medicine, to tackle this growing problem.



Reimer and Herzog's work has shown rats fed a high-fat, high-sugar diet see changes to their gut microbiota and joint and muscle inflammation, a condition called metabolic OA. Some of these changes occurred days into the experiment — before the rats gained weight. "We discovered that a high-fat, high-sugar diet alone can change the muscles and joints of animals," says Herzog.

Would altering the gut microbiota in obese rats halt metabolic OA? Reimer has shown a

prebiotic fibre supplement reduced body fat and altered intestinal microbiota in overweight or obese children. Graduate student **Jacqueline Rios** found feeding obese rats a prebiotic fibre supplement and/or having them walk prevented the joint damage. Postdoctoral Fellow Dr. **Rafael Fortuna** is studying this in humans. All team members are also part of the McCaig Institute for Bone and Joint Health.



8,500 sign up for new online concussion course

To help prevent, detect and manage concussions, the Faculty of Kinesiology has developed a course for parents, coaches, teachers and administrators, health-care professionals and those who have experienced a concussion.

The massive open online course, or MOOC, “demystifies concussion and explains how everyone can play a role to prevent, identify and manage this type of traumatic brain injury,” says Dr. **Kathryn Schneider**, an associate professor and clinician scientist (physiotherapist) in the Sport Injury Prevention Research Centre. Schneider

The university-level course, accessible to everyone, will have a significant impact on concussion education.



is an international leader on rehabilitation research in concussion in sport. She is an author of the latest International Consensus Statement on Concussion in Sport (which includes preventing, assessing and treating sport-related concussions).

To deliver the first seven-week course in concussion, Schneider worked with Dr. **Pierre Frémont**, MD, at Université Laval. He has taught MOOCs for years. The non-credited university-level course is accessible to everyone. *“The course will have*

a significant impact on concussion education,” says Dr. **Penny Werthner**, dean of the Faculty of Kinesiology. *“Not only will this course engage students at UCalgary across multiple programs, it will lead to positive public health in communities locally, provincially, nationally and internationally.”* The first course at UCalgary had more than 8,500 participants from around the world.



RECONSTRUCTION IN YOUNG KNEES

Dr. **Nicholas Mohtadi**, MD, of the Sport Medicine Centre has shown that grafts of tendons used in reconstructing the ACL are not all equal for younger patients at high risk of reinjuring their knees. His work suggests a specific graft type, a patellar tendon from their own knee, has the best outcome.

WILD WEST OF WEARABLES

Dr. **Reed Ferber** has set the first guidelines on using data from wearable technology in a study published in the Journal of Biomechanics. Until now, it's been "the wild west," says Ferber, professor in the faculties of Kinesiology, Nursing and Cumming School of Medicine and director of UCalgary's Running Injury Clinic.



A RICH HISTORY OF EXCELLENCE

Biomechanics researchers hosted the field's largest conference with more than 2,000 people attending the XXVII Congress of the International Society of Biomechanics held in conjunction with the 43rd Annual Meeting of the American Society of Biomechanics. What a great testimony to the excellent work conducted by the faculty over many decades.

KEEPING ELDERLY HEALTHY

Dr. **Juan Murias** examines how we keep our elderly citizens living independently by establishing cardiovascular function throughout their lifespan. He also identifies barriers to exercise to provide evidence-based recommendations to promote active and healthy living.

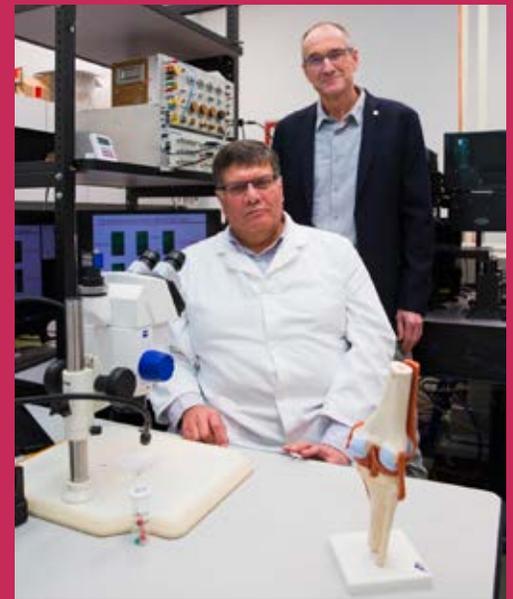
\$12 MILLION TO STUDY YOUTH CONCUSSIONS

Youth account for more than half of the annual burden of three million concussions annually in North America. The University of Calgary has received this funding from the National Football League's scientific advisory board for a pan-Canadian research program, led by Dr. **Carolyn Emery**, Faculty of Kinesiology, to reduce concussions and their consequences in youth sport on a national level.



KNEE CARTILAGE PROTECTION

Kinesiology researchers Drs. **Ziad Abusara** and **Walter Herzog** may have discovered why most patients who had their meniscus removed developed knee osteoarthritis. Using a powerful, customized microscope, they found when the meniscus is removed in mice, extensive cell death occurs within hours during vigorous exercise.



STUDY FINDS CAFFEINE BOOSTS HOCKEY PLAYERS' PHYSICALITY

Kinesiology postdoctoral scholar, Dr. **Lauren Benson** has found caffeine may help increase physical contact or high-intensity skating in hockey players without hurting their performance. Her study, with co-author PhD student **Robyn Madden**, Effects of Caffeine on Exertion, Skill Performance, and Physicality in Ice Hockey, was published in the International Journal of Sports Physiology and Performance.



By the Numbers

1100+
Undergraduate students

37
Graduate students awarded
prestigious scholarships

32
Undergraduate students working
on research projects

116
Graduate students

120+
Undergraduate
practicum positions

57
International students

Awards and honours

Media and interviews

56 

31 

Peer reviewed journal publications

Keynotes and invited lectures

92 

196 

Research Themes

- Movement Science & Musculoskeletal Health
- Injury Prevention, Sport Medicine & Rehabilitation
- Exercise Physiology & Nutrition in Health and Sport
- Psychosocial Aspects of Health and Sport

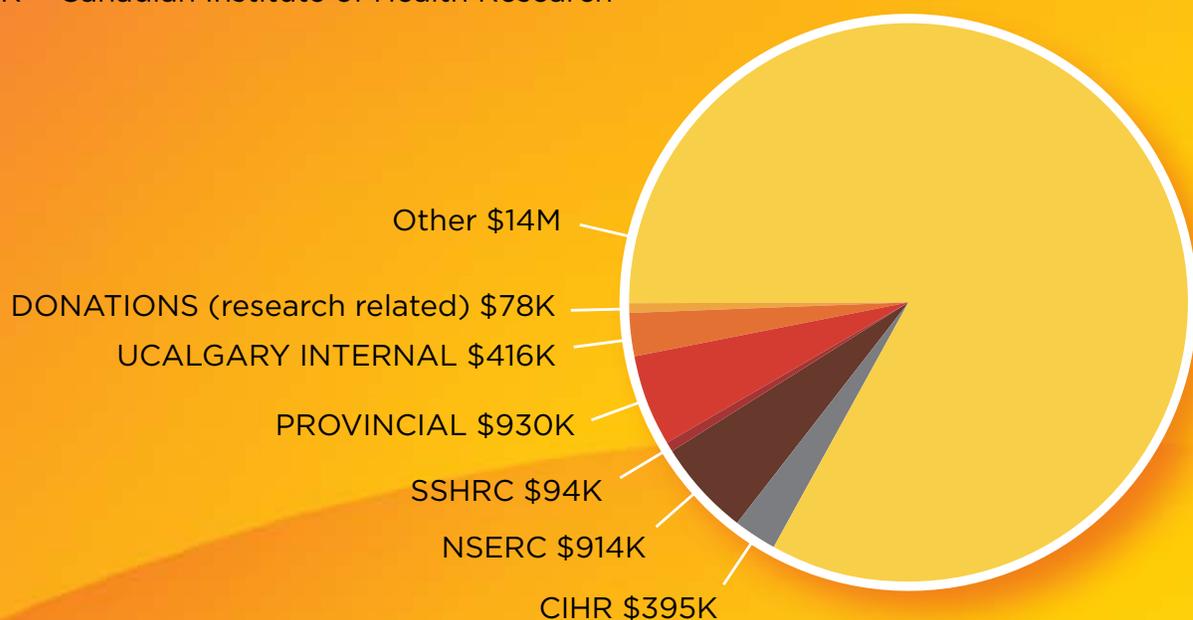


Faculty of Kinesiology Research Funding (2018/19)

NSERC - Natural Sciences and Engineering Research Council of Canada

SSHRC - Social Sciences and Humanities Research Council

CIHR - Canadian Institute of Health Research



“We are trying to support long-term behaviour change in our cancer survivors. We want them to build the habit of being physically active.”

- Dr. Nicole Culos-Reed.



Giving back to our community

Our students, faculty and staff lead the way to active, healthy living through partnership, engagement and strong philanthropic support.

Alberta Cancer Exercise program expands across province

The Alberta Cancer Exercise program, ACE, is two years into a five-year pilot program across the province. Research by Dr. **Nicole Culos-Reed** “clearly shows” exercise should be a part

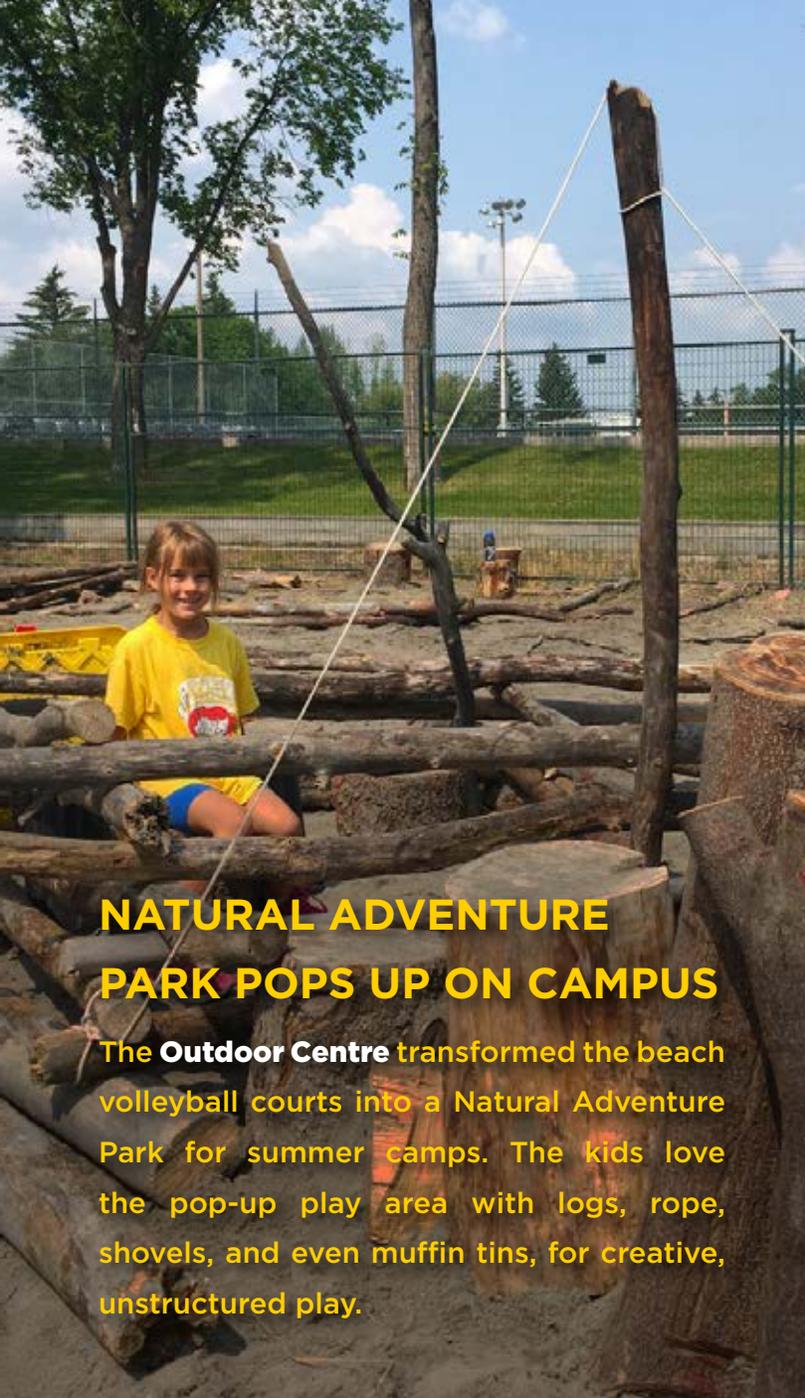
of standard cancer care. ACE sees trainers and groups of people who have had cancer meet twice a week for 12 weeks. “*This support ensures a healthier cancer survivor, and ultimately, less*



burden on our health-care system,” she says. “ACE is a program to which all cancer survivors should have access to optimize quality of life.”

Culos-Reed is working with Dr. **Margie McNeely** at the University of Alberta. The two have received funding from Alberta Innovates and the Alberta Cancer Foundation to develop ACE programs in Calgary, Edmonton, Red Deer, Lethbridge, Medicine Hat, Fort McMurray and Grande Prairie.

“This has been extremely popular, as we’re seeing approximately 70 per cent of our ACE’ers uptake into a maintenance program or transition into another fitness program in their community,” says Culos-Reed. “Maintenance is so important, as we are trying to support long-term behaviour change in our cancer survivors. We want them to build the habit of being physically active.”



NATURAL ADVENTURE PARK POPS UP ON CAMPUS

The **Outdoor Centre** transformed the beach volleyball courts into a Natural Adventure Park for summer camps. The kids love the pop-up play area with logs, rope, shovels, and even muffin tins, for creative, unstructured play.

DINOS COACH AWARDED ORDER OF UNIVERSITY

Greg Vavra has received UCalgary's Order of the University. He quarterbacked the Dinos to their first Vanier Cup in 1983, played in the CFL for five seasons and joined the Dinos coaching staff as offensive co-ordinator in 2006. He is active in the **Dinos Fifth Quarter Alumni Association**.

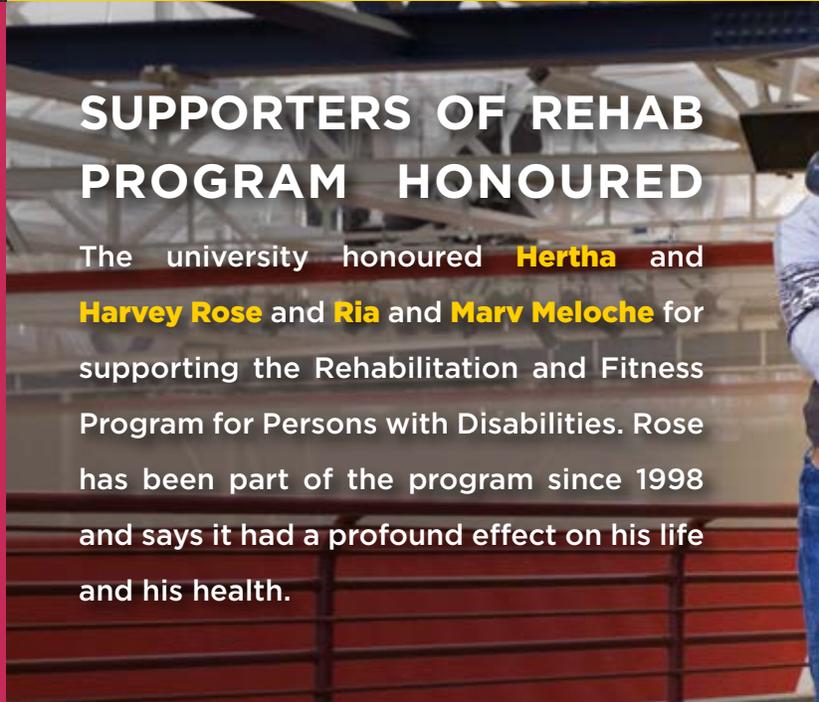


WORLD RECORD ICE

The **Olympic Oval** continues to be the **Fastest Ice in the World™**, with **Four** new world records in 2018-2019 as well as empowering thousands of people to skate for the first time.

THANK YOU

Our donors gave **\$15,991,213** this year to energize students, support athletes and aid researchers with major breakthroughs. We are thankful for your generous support - you are shaping the world of tomorrow through your support.



SUPPORTERS OF REHAB PROGRAM HONoured

The university honoured **Hertha** and **Harvey Rose** and **Ria** and **Marv Meloche** for supporting the Rehabilitation and Fitness Program for Persons with Disabilities. Rose has been part of the program since 1998 and says it had a profound effect on his life and his health.

CALGARY BOOSTER CLUB HONOURS KINESIOLOGY RESEARCHER

Dr. **Preston Wiley**, MD, Kinesiology researcher at the Sport Medicine Centre, has received the 2019 Honoured Athletic Leader award from the **Calgary Booster Club**. After playing elite rugby he researched overuse degenerative problems, including tendon and knee osteoarthritis.



ACUTE AND CHRONIC STRESS STUDY

Stress is a silent thief. Dr. PH **Tish Doyle-Baker** is investigating how it influences a female student's hormones and eating patterns. Stress can do many things, even contribute to bone mineral density loss. It is important to know what it does to help reduce issues earlier.

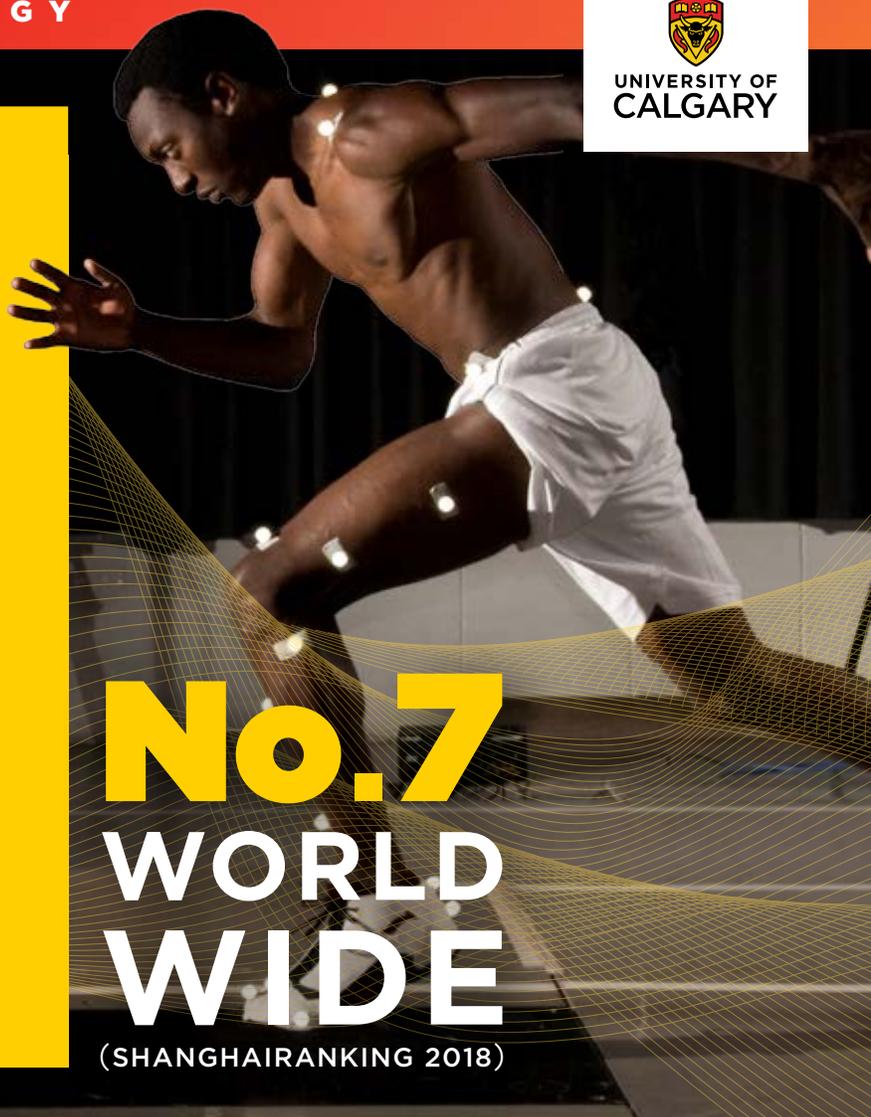


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UNIVERSITY OF
CALGARY

No.1
SPORT
SCIENCE
SCHOOL IN
NORTH
AMERICA



No.7
WORLD
WIDE
(SHANGHAIRANKING 2018)

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