



UNIVERSITY OF
CALGARY



FACULTY OF KINESIOLOGY

2020/21

Community Report



Dean's Message

We have certainly faced challenges again this year with COVID-19. Similar to last year, the pandemic colours everything we do in our faculty, our university and our world.

However, students, faculty members, and staff have courageously stepped up to meet this adversity by continuing to conduct their research, teach their classes, keep our facilities open when possible, and offer our activity programs, such as in-person summer camps and virtual fitness classes.

And even with COVID-19, we have some great news to share. Our faculty achieved another milestone by maintaining our position within an exclusive, international class of sport science schools. For the second time, the faculty is ranked No. 1 in

North America according to ShanghaiRanking's Global Ranking of Sport Science Schools and Departments, and 10 out of 429 universities globally. This is a terrific achievement!

I want to touch briefly on other accomplishments, which make an impact in our community and beyond.

- We are solving the conundrum of concussions and injuries in youth via the SHRed Mobile: a self-contained, converted recreation vehicle, which is part research lab and part interactive education tool.

Cover photo: In front of the SHRed Mobile, from left: Penny Werthner (Dean), Carolyn Emery, Gordie, Bill Monks (president, Bantam Football League), Ron Logan, Jonathan Smirl, Kathryn Schneider, Craig Reardon and Shane Esau.



- We are exploring alternatives to the one-size-fits-all approach to exercise intensity for maintaining a healthy cardiovascular system, especially for those over 65.
- We are collaborating with other scholars to investigate how brain blood flow is regulated, a key to understanding how the brain changes under stress, such as after a concussion.
- We are developing new ways of performing neurological testing with greater accuracy and are bringing these new neurological wearable technologies to market.

- We have customized an eight-week yoga program for young adults affected by cancer, which enhances their overall quality of life.

Our work has an impact in our community as it enables us to understand the importance of movement for both performance and health, as well as creating opportunities for our students to learn and work alongside our superb faculty members.

Dr. **Penny Werthner**
Dean, Faculty of Kinesiology

Research Sparks Innovation

Faculty of Kinesiology
is truly making an
impact in our society



Electrifying new research on head trauma in career fighters

The stakes are high in the world of combat sports, highlighted by accidental deaths that have occurred in the ring. Researchers in the Faculty of Kinesiology have a new technology that could help protect fighter's brain health with important information for their 'return-to-ring' decision.



Dr. **Ryan Peters'** team has uncovered evidence of accelerated vestibular damage and aging in middle-aged career boxing and Muay Thai fighters. *"Just as high-intensity sound can damage the hair cells of your auditory system, there is mounting evidence that high-intensity head motion from being repeatedly punched and kicked has a similar effect on the vestibular system,"* says Peters, PhD.

The team created an innovative technique called Electrical Vestibular Stimulation and is collaborating with PROTX Medical Ltd. This new device could enable more precise in-clinic and remote diagnoses and treatment management for conditions such as stroke, spinal injuries, and invasive neurosurgeries, as well as healthy aging and neuro-degenerative conditions such as multiple sclerosis and Parkinson's disease.

Rare fractures in post-menopausal women

Researchers in the Faculty of Kinesiology and the McCaig Institute for Bone and Joint Health are examining a very rare type of fracture for those with osteoporosis, known as an atypical femoral fracture. Dr. **Brent Edwards**, PhD, and his team are studying the cause of fatigue fractures that occur in the thighbone.

Staying fit over 65

Dr. **Meghan McDonough**, PhD, partnered with City of Calgary to learn how to better support older adults to be active and socially connected during COVID-19. In this research project, they were looking at how to adapt and continue to adapt to do the best to recreate these social connections, even though it's harder to do with limitations.





Brain under stress

Dr. **Jonathan Smirl**, PhD, is investigating how brain blood flow is regulated — an important key to understand how the brain changes under stress, such as after a concussion. Over the next five years, the assistant professor will investigate cerebral blood flow changes in adolescence through adulthood, looking at how long exercise impacts cerebral blood flow.



"This scholarship is a great honour. It takes some of my stress away in terms of not needing a job and I can focus more on my school work."

Reyna Crawford

Exceptional learning

We prepare students to critically examine the world

Hayley Wickenheiser inspires scholarship

Reyna Crawford remembers when she first saw Hayley Wickenheiser in person. It was in the weight room at the University of Calgary. *"I am from Calgary and it was so cool to see her. She didn't know me and I didn't want to bug her as she was grinding out a workout. It was exciting to see her in person,"* says Crawford, a kinesiology student who plays on the Dinos women's basketball team.

Dr. Wickenheiser, BKin'13, MSc' 16, MD' 21 played with the Dinos and the Canadian Women's National Team, and is the world's best female hockey player. She also supports females in hockey with the annual Canadian Tire Wickenheiser World Female Hockey Festival or Wickfest. On March 16, she was also inducted in the Canada West Hall of Fame as the final member of the 2020-21 induction class.

Inspired by her hockey career and leadership, the Faculty of Kinesiology created a scholarship in her name for varsity women athletes.



he world and create new knowledge

Crawford is one of three kinesiology female Dinos athletes to win this inaugural Hayley Wickenheiser scholarship. The other two recipients are wrestler Drew Persson, and Rebecca Clarke, who plays on the Dinos women's hockey team.

"This scholarship is a great honour. It takes some of my stress away in terms of not needing a job and I can focus more on my school work," says Crawford, 22, who is a biomechanics major and hopes to do a master's in the same field. Besides basketball, Crawford is part of the Equity, Diversity and Inclusion Kinesiology undergraduate committee and a member of the RoboGals club, which is a club with the mission to inspire, engage and empower young women into entering engineering and related fields.


University teaching accolades

The University of Calgary Teaching Awards recognize outstanding contributions to teaching and learning. Dr. **Carol Gibbons Kroeker**, PhD, received a sessional instructor's award. The faculty received an award in the Curriculum Development category. The team was: Dr. **Cari Din**, PhD, Dr. **William Bridel**, PhD, **Simon Barrick**, Dr. **Dave Paskevich**, PhD, and **Jodie McGill**, undergraduate advisor (team lead).

Students

Best in class teachers from the SU

The annual Teaching Excellence Awards gives undergraduate students the chance to decide which instructors and teaching assistants have made a lasting, positive impression over the past year. The recipients this year were Dr. **Carol A. Gibbons Kroeker**, PhD, and **Laura Elizabeth Crack**, PhD student, (teaching assistant category). Dr. **Cari Din**, PhD, was inducted into the teaching Hall of Fame.



First in Canada to offer a teaching certificate in safe dance

Creation of a Healthy Dance Practice Certificate adds more value to the Dance Science program's strong science focus. Dr. **Sarah Kenny**, PhD, wanted to give students the possibility to pursue a teaching certificate, alongside their degree, that is specifically designed to integrate safe dance practice principles both in their own dance practice, and in their teaching practice as well.



Undergraduate earns mental health award

Adesua Egbase received a new Students' Union award that recognizes leaders in mental health awareness. As a UCalgary residence wellness community adviser, Egbase influenced the development of residential communities by acting as a positive resource for residence students. They helped to promote an inclusive living environment for a diverse demographic of students, and encouraged the importance of cultural representation.

Connecting with our

We collaborate with organizations, programs and foster skill development

Community

Let's SHRed concussions and injuries in youth

The SHRed Mobile is part research lab, part interactive education and more.

A team of researchers, led by Dr. **Carolyn Emery**, PhD, unveiled the SHRed Mobile: a self-contained, converted recreation vehicle that will house equipment and **Sport Injury Prevention Research Centre** (SIPRC) staff and students to conduct sport-related concussion research, education, knowledge translation, and events across Alberta for youth.

Emery's team is the first Canadian research team to receive funding from the National Football League's **Play Smart Play Safe Program** to lead the Surveillance in High School and Community Sport to Reduce Concussions and Consequences of Concussions in Canadian Youth (SHRed Concussions) project. This multi-year, pan-Canadian project will inform a better understanding of the concussion burden, mechanisms, recovery, and management in high school-age athletes.

Community



“Our team aims to reduce youth sport-related concussions and their consequences so kids and their families can focus more on the fun, competition, and other benefits of sport. One of the key ‘vehicles’ to help us achieve this is the SHRed Mobile.”

Dr. Carolyn Emery

“It takes innovation and creativity to make research accessible and usable for the public. The SHRed Concussions team has found a novel way to translate their research into an interactive experience that will have a positive impact on the health of our communities,” says Dr. William Ghali, MD, vice-president (research) at UCalgary.

The goal of SIPRC is to promote health and lifelong physical activity participation through the reduction of injuries — including concussions — in sport and recreation.

“The SHRed Mobile is an innovative and natural progression of our program to scale up our concussion research in the Integrated Concussion Research Program at UCalgary with our wider Alberta communities. The SHRed Mobile will support our team to reach youth participants, schools, communities, and events outside of Calgary and area where more than 70 per cent of youth in Alberta live,” says Emery, who is an epidemiologist and physiotherapist in the **Faculty of Kinesiology**.

We want your data

Dr. **Reed Ferber**, PhD, launched the Wearable Technology Research and Collaboration (We-TRAC) program in 2020. He has gathered 140,000 hours of citizens' physical activity data, and is seeking even more data. Participants who provide their data, will be contributing to 16 research studies underway, looking at everything from cycling routes to sleep patterns. Sign up to participate at wetrac.ucalgary.ca.



Creation inspires movement

The faculty's Be Fit For Life Centre created a Blackfoot Creation story. This narrative combines creative storytelling and physical movement to help retention among younger students. The narrative adds an imaginative mental focus that helps them connect to the stories and lessons being taught. Readers and listeners are prompted with movement cues that help them develop physical literacy.



UNIVERSITY OF
CALGARY



Yoga for young adults affected by cancer

The eight-week customized program was created by postdoctoral scholar, Dr. **Amanda Wurz**, PhD, with support from Dr. **Nicole Culos-Reed**, PhD. There is early evidence to suggest that young adults affected by cancer who practice yoga have better flexibility, improved range of motion, better mood, less anxiety and depression and enhanced overall quality of life.

Students supporting their peers

This year we launched the first-ever **Kin Peer Connections** Program for first-and-second year kinesiology students. Topics covered included transitioning from high school to university, helping students moving from remote to in-person learning, the importance of mental health and self-care, and university learning beyond the classroom.

FACULTY OF KINESIOLOGY

Dr. Penny Werthner, Dean, Faculty of Kinesiology

**The Faculty of Kinesiology is the No. 1 ranked sport science school
in North America and No. 10 globally.**

2500 University Drive NW Calgary, AB, Canada T2N 1N4

kinesiology.ucalgary.ca



UNIVERSITY OF
CALGARY