NEW ACADEMIC FACULTY MEMBERS

Cindy Barha

Cindy Barha is a Behavioural Neuroscientist with a trans-disciplinary skillset with extensive training in exercise neuroscience, neuroendocrinology, and epidemiology. She has expertise in cognitive aging and women's brain health.

The focus of Dr. Barha's trans-disciplinary research program is to promote healthy brain aging and prevent dementia by developing efficacious and personalized exercise interventions as "medicine" for cognition and neuroplasticity using mixed-methods. Specifically, she is interested in determining who benefits from exercise by focusing on biological sex and genetics, when in the lifespan to most effectively intervene with exercise (i.e., pregnancy, midlife, older age), and how exercise exerts its influence on the brain. Her past research has been focused on the short- and long-term consequences of pregnancy for brain health and the role of exercise. She also investigates how the hypothalamic-pituitary-adrenal and hypothalamic-pituitary-gonadal axes are involved in the effects of exercise on the brain.

Acknowledgments

Joan Snyder

Joan Snyder (Hon. LLD'11), one of UCalgary's longest-standing donors and dear friend of the Faculty of Kinesiology, passed away on April 7, 2022, at the age of 90. Joan honoured our university with a game-changing gift of $67.5 million.

This gift will boost research, learning and athletics while taking sport-science research to unprecedented new heights – building on UCalgary's reputation for being a top-five research university, the No. 1 sport-science school in North America and No. 10 globally.

Thanks to Joan's unwavering support in research excellence, we are now able to take our research to the next level with the $30M Joan Snyder Fund for Excellence in Kinesiology focused on Health, Exercise, Sport and Women's Wellness.

2022 - HIGHLIGHTS
HUMAN PERFORMANCE LAB

DIRECTOR'S MESSAGE

2022 was a year of revitalization, marked by the removal of nearly all COVID-19 pandemic restrictions and the reopening of most international borders. From a professional standpoint, this meant the resurgence of in-person scientific conferences and a reconnection with close colleagues and collaborators that were so dearly missed. For our many international students and trainees, this meant the ability to visit family and friends for the first time in years. The influx of new students and staff, and revival of in-person seminars and lab meetings, brought a sense of normalcy to the HPL culture and dynamics that makes this place so special.

2022 also marked the unfortunate passing of Joan Snyder, a visionary philanthropist and dear friend to the Faculty of Kinesiology. Joan was one of the University of Calgary's longest-standing donors, providing decades of support for women's hockey, sport science, and research into chronic and infectious diseases. Joan's unmatched generosity is underscored by a transformative $67.5 million gift to the University of Calgary. $30 million of this donation will go towards the establishment of the Joan Snyder Fund for Excellence in Kinesiology. The Joan Snyder Fund will provide strategic funding to advanced research into physical activity and health in women and girls and support our international reputation in sports science.

The success of the Human Performance Laboratory would not be possible without your support. We would like to thank the University of Calgary, the Faculty of Kinesiology, and our many donors, supporters, granting agencies, family, and friends for your trust in us and our research, and your belief that the pursuit of human mobility, longevity, and quality of life are worthwhile endeavors.

Walter Herzog, Director

W. Brent Edwards, Co-Director

The full version of the Annual Report can be found at www.ucalgary.ca/hpl

AWARDS & HONOURS

Members of the Human Performance Laboratory that were honoured for their scientific contributions:

External Honours

Carolyn Emery	Canadian Academy of Sport and Exercise Medicine Presidential Coin
Kathryn Schneider	Canadian Physiotherapy Association Centenary Medal of Distinction
Walter Herzog	Killam Annual Professor, University of Calgary, Killam Trust

Special Appointments

Brent Edwards	Co-Director, Human Performance Lab, Faculty of Kinesiology
Carolyn Emery	Global Chair, UK, University of Bath (2022-2023)

External Awards

Amanda Black	Canadian Collaborating Centers for Injury Prevention Award
Baaba Otoo	Canadian Society for Biomechanics Graduate New Investigator Award – Doctoral Level
Bryan Yu	Young Investigator Award, Sport Innovation (SPIN) Summit
Dana Lowry	Donald N. Byers Memorial Killam Scholar Prize
Dana Lowry	Izaak Walton Killam Doctoral Scholarship
Kenzie Vaandering	President's Award
Walter Herzog	University of Calgary Internationalization Career Achievement Award (UCIA)

SUPPORT

Our work was financially supported by many different sources, the University of Calgary, government grants, industry and non-government sources and external student support. The corresponding amounts in Canadian dollars were:

University	**$4.1M**	**43%**
Gov. Grants	**$3.8M**	**40%**
Industry	**$0.83M**	**8%**
Students - External	**$0.75M**	**3%**
Total	**$9.48M**	

For 2022, the average research dollars available per faculty members was about $631,625. We thank all supporters of our work, the Faculty of Kinesiology, the University of Calgary, all granting agencies and industry partners.

Research Aimed at Improving Chuckwagon Horse Safety

Horses are a marvel of physiological engineering. With powerful lungs, large hearts and legs that can bear a considerable amount of weight, they have the potential to be top athletes. But like their human counterparts in competitive sports, horses working at a high level of physical exertion have a risk of injury.

Dr. Renaud Léguillette, professor in the Faculty of Veterinary Medicine, is studying surfaces in chuckwagon racing with the aim to reduce the risk of leg injuries. Léguillette has teamed up with an expert in exercise-related human tibial fractures, **Dr. Brent Edwards**, PhD graduate student **Olivia Bruce**, Faculty of Kinesiology, and **Dr. Thilo Pfau**, who researches high performance equine biomechanics and is jointly appointed in the faculties of Kinesiology and Veterinary Medicine. The project aims to support the Calgary Stampede in efforts to optimize track conditions and continually improve safety.

In order to address the aims of their study, researchers had competitive horses run at full speed on different track surfaces while measuring the corresponding accelerations on their legs.

The track surface is one parameter that can be controlled in horse racing, and we are interested in optimizing performance of the horses while simultaneously reducing the risk of leg fractures. Data collection involves sophisticated instrumentation of the horse and a saddle-fixed data collection system for measurements while the horses gallop at full effort. Working in collaboration with Veterinary Medicine, the Calgary Stampede, and members of the Human Performance Lab combines all the required expertise in a beautiful project.