

McCAIG **RESEARCH DAY** **2025**

THEATRE 4 AND HRIC ATRIUM

05.14.2025



McCAIGINSTITUTE
FOR BONE AND JOINT HEALTH



◆ Program ◆



- 8:00am **Registration**
coffee and pastries
- 8:25am **Welcome**
Dr. Cheryl Barnabe, MD MSC FRCPC
Opening remarks
- 8:30am **Keynote Speaker**
Dr. Thilo Pfau, PhD
University of Calgary

Aiding veterinary decision making and
preventing injuries in horses with wearables
- 9:35am **Podium Presentations**
See page 5 for list of presenters
- 10:30am **Break**
- 10:50am **Teaser Talks**
See pages 6 & 7 for list of presenters
- 12:00pm **Lunch and Poster Session**
HRIC Atrium
See pages 8 & 9 for list of posters
- 1:30pm **Podium Presentations**
See page 10 for list of presenters
- 2:25pm **Break**
- 2:40pm **Podium Presentations**
See page 11 for list of presenters
- 3:30pm **Judging Break**
- 3:40pm **Awards & Closing Remarks**
Dr. May Choi, MD MPH FRCPC
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◆ SPEAKERS ◆



Dr. Cheryl Barnabe, MD MSC FRCPC
Director, McCaig Institute
Professor
Opening Remarks



Dr. Thilo Pfau, PhD
Professor
Keynote



Dr. Manny Ester, PhD
Postdoctoral Fellow
Emcee



Dr. May Choi, MD MPH FRCPC
Associate Professor
Closing Remarks



DR. MARVIN FRITZLER

◆ NIDUS AWARDS ◆

The Dr. Marvin Fritzler Nidus Awards provide monetary prizes to trainees who present innovative work at the annual McCaig Research Day. The primary criterion for these awards is the research's potential to be the nidus for significant future discoveries and applications in human and/or animal health.

The following prizes will be awarded:

Podium Presentations

1ST - \$500

2ND - \$300

3RD - \$200

Teaser Talks

1ST - \$500

2ND - \$300

3RD - \$200

◆ POSTER CONTEST ◆

UNLOCK KNOWLEDGE, COLLECT INITIALS, WIN PRIZES

Visit posters to win!

We're thrilled to bring back the Passport Challenge for this year. Your goal is to fill your passport with as many initials as you can. You earn initials by visiting and listening to a poster presentation in the Atrium. The operations team will collect your passport after the lunch break just before our afternoon podium talks begin. The two passports with the most stickers will win a swag-filled prize pack each!



◆ Podium ◆ Presentations

9:35 am to 10:30 am

Yousif Al-Khoury

MSc Student, Manske Lab

Curriculum-based learning of Cone-Beam CT Super-Resolution

Christina Alexander

PhD Student, Gabel Lab

Bone mineral density and microarchitecture in peri- and early menopausal women

Josh Chan

MSc Student, Kendal Lab

Mutational Analysis of Primary and Advanced Chordoma Tissue using Next-Generation Sequencing

Jessica Corpuz

PhD Student, Krawetz Lab

Delivery and Expression of Proteoglycan 4 Plasmid in Mice

Cassidy Da Silva

PhD Student, Hallgrimsson Lab

Analyzing 3D facial morphologies to understand phenotypic heterogeneity in HNRNP-related neurodevelopmental disorders



◆ Teaser Talks ◆



10:50 am to 12:00 pm

Jaylon Pascual

MSc Student, Rogers-Bradley/Roach Labs

Biomechanical Impact of an Actuated Knee Orthosis on Patients Undergoing Proximal Tibia Reconstruction

Aria Ahadzadeh Ardebili

PhD Student, Krawetz Lab

Investigating the link between antiepileptic drugs and bone remodeling

Donald Golden

PhD Student, Manocha/Hart Labs

Influence of the Menstrual Cycle on Knee Joint Laxity and Generalized Joint Hypermobility in Females with Joint Hypermobility Conditions

Mataea Armstrong

MSc Student, Harris/Manske Labs

Understanding central pain in knee osteoarthritis: an ongoing multimodal clinical study

Kurt Hildebrand

PhD Student, Monument Lab

Assessing how macrophages influence CAR T therapy in soft tissue sarcoma

Reza Kakavand

PDF, Edwards Lab

Continuum Damage Modeling of Biaxial Fatigue Failure in Whole Bone: A Hybrid Approach with Machine Learning Integration



◆ Teaser Talks ◆



continued

Pranav Ramesh

PhD Student, Chu Lab

Investigating spinal bone malformations to uncover the role of NOTCH signaling during human somitogenesis

Barbod Shiri

Undergrad Student, Herzog Lab

Does a high fat sucrose diet affect the forelimb muscle integrity in rats with diverse inherent aerobic capacity?

Nina Pavlovic

MSc Student, Boyd Lab

Establishing how precisely we can measure bone changes in the knee by dual-energy computed tomography

Maria Del Toro Zechinelli

MSc Student, Krawetz Lab

Functional comparison of primary synovial membrane MSCs vs. iPSC-derived iMSCs from the same patient

Robert Chauvet



PhD Student, Roach Lab

Talonavicular compensation for tibiotalar motion in total ankle replacement

Andreas Dauter

PhD Student, Hallgrimsson Lab

A Model of the Middle: How do cell behaviours shape the embryonic face?





◆ Posters ◆



Beth Barretto

HQP, Hallgrimsson Lab

Quantifying the Epistatic Relationship Between Fibroblast Growth Factors 8 and 17 in Embryonic Craniofacial Development

Jessica Booth

HQP, Schmeling Lab

A Pilot Randomized Controlled Trial: Feasibility and Acceptability of a Virtual Adolescent Self-Management Program for Juvenile Idiopathic Arthritis

Daniyya Chaudhry

PhD Student, Schneider Lab

Prolonged Platelet Mediated Hypercoagulability Exists Following Primary Total Hip and Knee Arthroplasty

Leah Kaluta

MSc Student, Gabel Lab

Women's perceptions of resistance training to improve bone health and reduce menopause symptoms

Grace Li

Undergrad Student, Choi Lab

Addressing Complications of Complement Activation Product Evaluation in Autoimmune Inflammatory Myopathies

Dora Modrcin

PhD Student, Krawetz Lab

The Role of Prg4 in the Coagulation Cascade

Mirna Negm

Undergrad Student, Eltorki Lab

Comparing backslabs versus collar and cuffs in pediatric supracondylar fracture



◆ Posters ◆



Tatjana Pejic

MSc Student, Krawetz/Sparks Labs

Investigating the Protective Effects of Prg4 in Equine and Human Models

Erin Roberts

PhD Student, Krawetz/Kallos Labs

Assessing the Effect of Bioreactor Expansion on Pluripotent Stem Cell Heterogeneity and Functionality

Justen Saini

MSc Student, Manske/Roach Labs

A New Dimension: Developing an Automated Pipeline for Measuring Three-Dimensional Carpal Alignment

Emily Smith

PhD Student, Roach Lab

Using Dual Fluoroscopy to Evaluate the Influence of Ankle-Foot Orthoses on Joint Kinematics

Alana Stahl



MSc Student, Whittier/Krawetz Labs

Investigating the Impact of ApoA1 Deficiency on Bone Marrow Adipose Tissue Across Sexes and Ages in Mice

Patrick Whitman

MSc Student, Gabel Lab

Does exercising during peri- or early post-menopause prevent muscle and bone loss: a systematic review





◆ Podium ◆ Presentations

1:30 pm to 2:25 pm

Annie Bugbird

PhD Student, Boyd Lab

Cracking under pressure: Localized bone deterioration predicts declining failure load

Mauricio Delgado

PhD Student, Herzog Lab

High inherent aerobic capacity protects muscle integrity from a high fat/high sucrose diet.

Emilie Gysel

PhD Student, Krawetz/Kallos Labs

Generation of equine induced pluripotent stem cells using non-integrating methods

Andrew Koshyk

PhD Student, Edwards Lab

Right Forelimbs Illustrate Greater Structural Bone Adaptations in Clockwise Racing Thoroughbreds

Khiran Arumugam

PhD Student, Manske Lab

Development and validation of an automated segmentation model of the psoas muscle in CT scans using deep learning-based segmentation: a retrospective study



◆ Podium ◆ Presentations

2:40 pm to 3:25 pm

Bryn Matheson

PhD Student, Boyd Lab

Reference Curves for Vertebral Bone Density from
Computed Tomography Scans of Albertans

Logan Mahoney

MSc Student, Monument Lab

Harnessing Radiation Therapy to Overcome STING Therapy
Resistance and Improve Outcomes in Soft Tissue Sarcoma

Camryn McMillan

MSc Student, Whittier Lab

Childhood obesity alters tibial load distribution and
mechanical adaptation of bone microarchitecture

Tadiwa Waungana

PhD Student, Manske/Edwards Labs

Structural bone and joint changes following high tibial
osteotomy for medial knee osteoarthritis

Callie Stirling

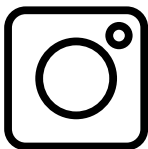
PhD Student, Boyd Lab

The Vanishing Act: What Happens to Bone Marrow Lesions
After ACL Tears?

◆ FIND US ON SOCIAL MEDIA ◆



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