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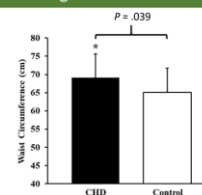
Child Health Research Trainee Day: A closer look

The 2019 Child Health Research Trainee Day was held on April 18, 2019 at Louis' Loft. The day offered presentations from 29 students from an array of disciplines including Medicine, Kinesiology, Pharmacy, Nursing, Physiology, and Community Health and Epidemiology. This year the students gave the judges a difficult task in choosing only one successful winner in the three poster categories as well the 1st and 2nd place standing for oral presentations. On behalf of the planning committee, we thank the judges for taking the time to provide encouraging critical feedback to all participants. Thanks to Dr. Tim Bradley, Dr. Erin Barbour-Tuck, Dr. Richard Huntsman, Dr. Marta Feltis-Erlandson, Dr. Mark Inman, Dr. Darryl Adamko, and Dr. Oluwafemi Oluwole. This year first place in the Oral Presentations went to [Natasha Boyes](#), Phd candidate supervised by Dr. Corey R Tomczak. She

studies integrative cardiovascular physiology in the College of Kinesiology with a particular interest in autonomic function in heart failure across the lifespan. Her lab is collaborating on a rehabilitation program for children with congenital heart disease, termed CHAMPS – “Children’s healthy-heart activity monitoring program in Saskatchewan”. Individuals with congenital heart disease are at greater risk for developing heart disease in their adult life. The study presented at the Child Health Research Trainee Day explored body composition in children and adolescents with congenital heart disease. They examined waist circumference in children with congenital heart disease compared to controls, while controlling for confounding factors as covariates in the analysis. The results indicated that waist circumference is elevated in

children with congenital heart disease compared to controls, even when accounting for differences in sex, physical activity, body size, and birth weight. This research will help educate children with congenital heart disease and their families about their condition and the actions they can take to mitigate their risk of developing future heart disease. This research is also important on shedding light on risk factors for heart disease. Natasha Boyes hopes to pursue a similar integrative research path as a career.

Waist Circumference ANCOVA in Children with Congenital Heart Disease



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Current manuscript in preparation has the following authors: Erin Barbour-Tuck, Corey R Tomczak, Dana S Lahti, Chantelle L Baril, Charissa Pockett, Shonah Runalls, Ashok Kakadekar, Scott Pharis, Timothy J Bradley, Kristi D Wright, and Marta C Erlandson. This research is funded by The Jim Pattison Hospital Foundation. For more information check out this recent publication <https://onlinelibrary.wiley.com/doi/full/10.1111/chd.12614>

Second place prize for the Oral Presentation section went to second year master student [Yuwen Zheng](#). Yuwen is currently completing her Masters of Science in Kinesiology under the supervision of Dr. Saija Kontulainen. Her research focus is children's muscle & bone, strength and development. Her presentation explored the relationship between grip strength and bone strength and specifically if grip strength above or below 50th percentile can differentiate bone strength in children. Distal radius bone strength was measured using high-resolution computed tomography (CT) and finite element model. Grip strength was measured using dynamometer.

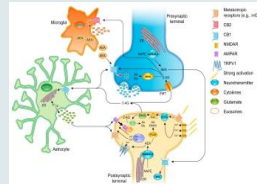


Yuwen's results showed grip strength was an independent predictor of distal radius bone failure load and stiffness. Boys with a grip strength <50th percentile had 18-19% lower failure load and stiffness than their peers with a grip strength ≥50th percentile. There was no difference in girls. This research can potentially develop an easy way to identify lower bone strength in boys who would benefit from potential intervention targeting optimizing bone strength development. Grip strength measurement may offer an inexpensive way to identify boys with low bone strength and help development of targeted exercises to optimize their bone strength development. Future studies could assess if grip strength percentiles can help identify children with history of fractures and potentially help identify children at risk of fracture. Collaborators: Dr. James Johnston from College of Engineering. This research is funded by grants from NSERC and CIHR.

For the Undergrad Health Science Poster Category, 1st place went to [Anna Maria Smolyakova](#). Anna Maria has completed three years in the Physiology and

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Pharmacology program at the College of Arts and Sciences and currently in her second year of Pharmacy. Under Dr. Laprairie's supervision, Anna Maria's research focuses on cannabinoids specifically looking at the endocannabinoid system of a rat model of childhood absence epilepsy (CAE). CAE is a rare form of epilepsy for which there is currently limited pharmacological options.



Endocannabinoids act in retrograde fashion, binding at the pre-synaptic terminal and preventing release of neurotransmitters
Ligresti A1, De Petrocellis L1, Di Marzo V1. [From Phytocannabinoids to Cannabinoid Receptors and Endocannabinoids: Pleiotropic Physiological and Pathological Roles Through Complex Pharmacology.](#) *Physiol Rev.* 2016 Oct;96(4):1593-659.

Anna Maria, Dr. Laprairie, and their collaborators are interested in investigating the endocannabinoid system in a validated rat model of CAE in order to understand the dysregulated machinery, which could be contributing to epileptogenesis. Currently she has been investigating and quantifying proteins involved in the gabaergic and cannabinergic systems within specific regions in the brains of the validated rat model, GAERS. This project is still in the very early drug development stage but the hope is that this research may help develop improved treatments for absence epilepsy in the future. Anna Maria would like to finish her PharmD with aspirations to pursue post-graduate studies and continue doing research. Collaborators on this project are: Mariam Alaverdashvili, Quentin Greba, Michael Anderson, Andrew J. Roebuck, Wendie N.Marks, Sumanta Garai, Terrance P. Snutch, Ganesh A. Thakur, John G. Howland, Matt Hill, Gavin Petrie, Samantha Baglot, Robert B. Laprairie. This research is funded by SHRF, Galaxo Smith Kline, CIHR, North Eastern University, National Institute on Drug Abuse, College of Pharmacy and Nutrition, and USask

First place in the Medicine Poster Category went to [Sarah Ardell](#). Sarah has a Bachelor of Arts in Psychology and is a MD candidate class of 2020. Her current area of research is in neonatal ultrasonography. The objective of this study was to use ultrasonography to document ranges of optic nerve sheath diameter (ONSD) in pre-term infants and determine if ONSD correlates most with pre-term infant's corrected gestational age, weight, or head circumference. Currently, invasive monitoring of raised intracranial pressure (ICP) is not recommended in this this age group. Pre-term infants are at increased risk of raised ICP due to their decreased gestation time.

Congratulations –

The Canadian Pediatric Society's [18 Accolades for 2018](#) highlighted two USask pediatricians: Drs. Krista Baerg and Mahli Brindamour. Dr. Baerg's groundbreaking Canadian Paediatric Surveillance Program (CPSP) Study was highlighted which aims to improve treatment pathways for children and youth with complex regional pain. Dr. Brindamour, member of the Caring for Kids New to Canada Task Force, co-wrote two articles in the British Medical Journal and [The Globe and Mail](#), protesting the treatment of migrant children and families at U.S. and Canadian border points.

Recent Publications

Ardell S, Daspal S, Holt T, Hansen G. [Optic Nerve Sheath Diameter for Preterm Infants: A Pilot Study.](#) Neonatology. 2019 Mar 19;116(1):1-5.

Chhabra A, Oen K, Huber AM, Shiff NJ, Boire G, Benseler SM, Berard RA, Scuccimarri R, Feldman BM, Lim LSH, Barsalou J, Bruns A, Cabral DA, Chédeville G, Ellsworth J, Houghton K, Lang B, Morishita K, Rumsey DG, **Rosenberg AM**, Tse SM, Duffy KW, Duffy CM, Guzman J; ReACCh-Out Investigators. [Real-World Effectiveness of Common Treatment Strategies for Juvenile Idiopathic Arthritis: Results from a Canadian Cohort.](#) Arthritis Care Res (Hoboken). 2019 May 10.

Cho S, Yankanah R, **Babyn P**, Stimec J, Doria AS, Stephens D, Wright JG. [Inter-rater reliability of the radiographic assessment of simple bone cysts.](#) J Child Orthop. 2019 Apr 1;13(2):226-235.

ElSayed E, **Daspal S**, Yee W, Pelausa E, Canning R, Shah PS, Yusuf K; Canadian Neonatal Network Investigators. [Outcomes of singleton small for gestational age preterm infants exposed to maternal hypertension: a retrospective cohort study.](#) Pediatr Res. 2019 May 13.

Fox DA, Kang KT, Potts JE, **Bradley TJ**, Stewart LL, Dionne JM, Sandor GGS. [Non-invasive assessment of aortic stiffness and blood pressure in young Turner syndrome patients.](#) J Pediatr Endocrinol Metab. 2019 May 27;32(5):489-498.

Gebreegziabher T, **Regassa N.** [Ethiopia's high childhood undernutrition explained: analysis of the prevalence and key correlates based on recent nationally representative data.](#) Public Health Nutr. 2019 Mar 21:1-11.

Gibson KM, Morishita KA, Dancey P, Moorehead P, Drögemöller B, Han X, Graham J, Hancock RE, Foell D, Benseler S, Luqmani R, Yeung RSM, Shenoi S, Bohm M, **Rosenberg AM**, Ross CJ, Cabral DA, Brown KL; PedVas investigators network. [Identification of novel Adenosine Deaminase 2 gene variants and varied clinical phenotype in pediatric vasculitis.](#) Arthritis Rheumatol. 2019 Apr 22.

Haas A. [Identification of neonatal abstinence syndrome in the community: Infants born into Canada's opioid crisis.](#) Paediatr Child Health. 2019 May;24(2):81-84.

Jariwala PS, Kalaniti K, Wonko N, Daspal S, Mugarab Samed V. [The Value of Different Radiological Modalities in Assessment of Spontaneous Pneumomediastinum: Case Review and Diagnostic Perspective.](#) AJP Rep. 2019 Jan;9(1):e72-e75.

Lopes-Junior LC, Silveira DSC, Olson K, **Bomfim EO**, Veronez LC, Santos JC, Alonso JB, Nascimento LC, Pereira-da-Silva G, Lima RAG. [Clown Intervention on Psychological Stress and Fatigue in Pediatric Patients With Cancer Undergoing Chemotherapy.](#) Cancer Nurs. 2019 Feb 12.

MacLellan K, **Davies K**, Fisher J, Lemay JF. [A boy with developmental regression.](#) Paediatr Child Health. 2019 May;24(2):67-68.

Mager DR, Liu A, Marcon M, Harms K, Brill H, Mileski H, Dowhaniuk J, **Nasser R**, Carroll MW, Persad R, Turner JM. [Diet patterns in an ethnically diverse pediatric population with celiac disease and chronic gastrointestinal complaints.](#) Clin Nutr ESPEN. 2019 Apr;30:73-80

Olakunde BO, **Adeyinka DA**, Olawepo JO, Pharr JR, Ozigbu CE, Wakdok S, Oladele T, Ezeanolue EE. [Towards the elimination of mother-to-child transmission of HIV in Nigeria: a health system perspective of the achievements and challenges.](#) Int Health. 2019 Apr 27.

Riar SS, Banh THM, Borges K, Subbarao P, Patel V, Vasilevska-Ristovska J, Chanchlani R, Hussain-Shamsy N, Noone D, Hebert D, Licht CPB, Langlois V, Pearl RJ, Parekh RS. [Prevalence of Asthma and Allergies and Risk of Relapse in Childhood Nephrotic Syndrome: Insight into Nephrotic Syndrome Cohort.](#) J Pediatr. 2019 May

Su Y, D'Arcy C, Yuan S, Meng X. [How does childhood maltreatment influence ensuing cognitive functioning among people with the exposure of childhood maltreatment? A systematic review of prospective cohort studies.](#) J Affect Disord. 2019 Jun 1;252:278-293.

Be sure to check out the new [Recent Publications Showcase](#) page of recent scholarly articles published by the College of Medicine researchers

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Ultrasonography of ONSD is widely used in older age groups; therefore, by establishing the normative ranges of ONSD in pre-term infants, and after further confirmation, it can be used as a safe and efficient form of investigation. This problem was investigated by scanning the ONSD of premature infants who did not have known intracranial pathologies. Three scans were performed on each closed eye of the patient with ultrasound settings specific to optic scans, and the patients were re-scanned weekly and the ONSD documented. The data from these scans was aggregated to demonstrate pilot normative data of ONSD for this age group. It was found that the ONSD was correlated with corrected gestational age while not correlated with head circumference or weight. Preterm infants benefit from this research as it decreases the need for invasive monitoring of ICP for these high-risk patients, allows for rapid diagnosis at the bedside and intervention when they are found to have raised ICP, and it is a safe method of monitoring with little to no side effects. Healthcare practitioners also benefit as it adds to their tool-box in making diagnoses and decisions which impact patient care in an emergency setting. This will ultimately lead to a decrease in resources and time to diagnose ICP in the preterm population. Internationally, this could provide rural communities of limited access to imaging modalities for investigating raised ICP using ultrasound. Sarah intends to pursue research in her career after observing how imperative research is to the betterment of patient care. Collaborators for this project: Sibasis Daspal, Tanya Holt, Gregory Hansen. For more information check out this recent publication:

<https://www.karger.com/Article/Abstract/497163>

[Stephanie Vuong](#) won first place in the Masters Poster Category. Stephanie has a Bachelor of Science in Toxicology and currently obtaining her Masters in Pharmacy. Her research interest is in pharmaceutical analysis and developing analytical methods to measure cannabinoid levels in pediatric patients. She is currently working on the Cannabidiol and Children with Refractory Epileptic Encephalopathy (CARE-E) study and the Prevalence of Prenatal Cannabis Exposure study, both led by Dr. Richard Huntsman. Currently, there is no dosing regimen available for the administration of Cannabis oil extract to children with refractory epileptic encephalopathy. Children are undergoing growth development throughout childhood, making it improper to design a “one size fits all” dose for the pediatric population, therefore, the CARE-E study is determining the age-dependent pharmacokinetics of

cannabinoids in children to develop dosing regimens suitable for different age groups. The CARE-E study will provide important knowledge regarding dosing guidelines for cannabis and children. With data supporting the efficacy of Cannabis oil therapy as well as an established dosing guideline, pediatricians can be more comfortable and certain with prescribing Cannabis oil to their patients. Since the legalization of recreational Cannabis, there has been concern regarding the potential increase of women using Cannabis while pregnant, leading to prenatal Cannabis exposure with possible permanent neurodevelopmental impairments. Currently, a qualitative/drug identification method is being developed, using LC-MS/MS, to detect for the presence of cannabinoids in newborn dried blood spots. Archived newborn dried blood spot samples taken two months before and after the legalization of recreational Cannabis will be analyzed. This will help to determine the prevalence of prenatal Cannabis exposure pre- and post-legalization of recreational Cannabis. Stephanie plans to continue doing research in the Cannabis field. She is passionate about challenging herself to discover new concepts that can apply to potential therapeutic applications. Co-supervisors: Drs. Jane Alcorn and Andrew W. Lyon. Collaborators: Dr. Richard Huntsman, Deborah Michel, and Fang Wu. This research is funded by Jim Pattison Children's Hospital Foundation, Saskatchewan Health Research Foundation (SHRF) and CoMRAD. For more information check out these recent publications: [Blood Collection Tube is the tube of choice for LC-MS/MS analysis of bioactive cannabinoids in plasma](#), [Pediatric Dosing Considerations for Medical Cannabis](#)



To check out all poster presentations
click on one of the posters

Updates at IMPACT

[IMPACT, Canada's Immunization Monitoring Program ACTIVE](#), is a national surveillance initiative managed by the Canadian Paediatric Society (CPS) and carried out by the IMPACT network of infectious disease specialists and nurse monitors. The Saskatchewan team lead by Dr. Ben Tan (Lead) and Dr. Athena McConnell (Co-Investigator) celebrate **Brenda Andreychuk** as a 20-year career veteran with IMPACT surveillance. Brenda was the lead nurse monitor contributing to the many successes the team has had. Her hard work and dedication over the years have left an imprint on both her team and the well-being of the people of Saskatchewan. Thank you Brenda on a well-deserved retirement! The IMPACT team would also like to welcome Shauna Richards who will join Chris Cadman as monitors.



Left to Right: Ben Tan, Chris Cadman, Shauna Richards, Brenda Andreychuk

The Children's Health Research Trust Fund (CHRTF) was established in 1983 to help raise funds to support child health research at the University of Saskatchewan. As all donated funds are endowed, the CHRTF has continued to grow to become an important part in helping advance research in the Department of Pediatrics. For further information about the CHRTF and to donate: <https://donate.usask.ca/online/chrtf.php>



Our Partners:

The Jim Pattison Children's Hospital has historically provided strong support for child health research in Saskatchewan. The recent \$50 million donation from Jim Pattison allows for a steady stream of revenue to help meet research and programming needs for generations to come. Groundbreaking opportunities for pediatric researchers in Saskatchewan are on the horizon



Contact us

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