

Deborah A. Marshall, PhD**Biosketch**

Professor, Department of Community Health Sciences, University of Calgary; Scientific Director, Research Evaluation, Partnership and Impact, Alberta Children's Hospital Research Institute (ACHRI); Canadian Academy of Health Sciences (CAHS) Fellow Principal Investigator: Enhancing a community of practice for the Health System Impact Fellowship Program: Advancing capacity for sustainable & patient-centred learning health systems across Canada

A. Expertise Keywords

Patient Preferences; Patient Engagement; Health Services Research; Simulation Models; Cost Effectiveness; Personalized Medicine; Osteoarthritis; Musculoskeletal; Discrete Choice Experiment; Rheumatology

B. Education & Training/Employment

| EDUCATION & TRAINING | | | |
|----------------------|---|---|---------|
| Degree | Institute and Location | Field of Study | Year(s) |
| PhD | University of North Carolina, Chapel Hill | Health Services Research and Health Economics | 1998 |
| MHSA | University of Alberta, Edmonton | Health Sciences | 1990 |
| BSc (Hons) | University of Toronto | Biochemistry | 1988 |

| SELECTED EMPLOYMENT | |
|---------------------|--|
| 2021 – Present | Scientific Director, Research Evaluation, Partnership and Impact, Alberta Children's Hospital Research Institute (ACHRI) |
| 2015 – Present | Professor, Cumming School of Medicine, Department of Community Health Sciences, University of Calgary |
| 2014 – Present | Senior Scientist, Arthritis Research Centre of Canada (ARC) |
| 2012 – 2022 | Arthur J.E. Child Chair in Rheumatology Outcomes Research |
| 2008 – 2018 | Canada Research Chair Tier II in Health Services and Systems Research, University of Calgary |
| 2015 – 2017 | Associate Professor, Institute of Health Policy, Management and Evaluation (IHPME), University of Toronto |
| 2008 – 2015 | Director of Health Technology Assessment, Alberta Bone and Joint Health Institute |
| 2008 – 2015 | Associate Professor, Department of Community Health Sciences, University of Calgary |

C. Awards and Distinctions

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| 2023 | Top 10 Articles of the 2023 Year as part of the Canadian Institute of Health Research (CIHR) Institute of Health Services and Policy Research (IHSPR) and Canadian Association for Health Services and Health Policy Research (CAHSPR) Article of the year (<i>Currie GR, Harris M, McClinton L, Trehan N, Van Dusen A, Shariff M, Kuzmyn T, Marshall DA. Transitions from Pediatric to adult rheumatology care for juvenile idiopathic arthritis: a patient led qualitative study. BMC Rheumatology, Nov 2022;6(1):85.</i>) |
| 2020 | Canadian Academy of Health Sciences (CAHS) Fellowship Award, University of Calgary |
| 2020 | Killam Annual Professorship Award |
| 2019 | Dr. Jill M, Sanders Award of Excellence in Health Technology Assessment, Canadian Agency for Drugs and Technologies in Health (CADTH) |
| 2018 | Peak Scholar Award, University of Calgary |
| 2017 | O'Brien Institute Research Excellence Award, University of Calgary |
| 2013 | Distinguished Achievement Cochrane Award for Research, Faculty of Medicine |
| 2012 | Early Career Excellence in Graduate Education Award, Graduate Science Education, University of Calgary |
| 2012 – 2013 | Board of Directors President, International Society for Pharmacoeconomics and Outcomes Research (ISPOR) |
| 2012 | Canadian Institutes of Health Research Celebration of Excellence in Health Research Knowledge Translation Prize, Arthritis Research Centre (ARC) of Canada Research Scientist for New Digital Media Knowledge |
| 2011 | Canadian Institutes of Health Research and Canadian Medical Association Journal Top Achievements in Canadian Health Research Award. |

D. Selected Peer Reviewed Publications (Career total 329; Last 5 years 149)

Abbatichio A, Theodorlis M, **Marshall DA**, MacKay C, Borkhoff CM, Hazlewood GS, et al. Policies in Canada fail to address disparities in access to person-centred osteoarthritis care: A content analysis. *Health Res Policy Syst*, 2023 (in press).

Khorshidi HA, **Marshall DA**, Goranitis I, Schroeder B, IJzerman M. System Dynamics Simulation for evaluating implementation strategies of genomic sequencing: tutorial and conceptual Model. *Expert Review of Pharmacoeconomics & Outcomes Research*, Oct 2023, Doi:10.1080/14737167.2023.2267764 (In Press)

Currie GR, [Lee R](#), Palacios-Derflinger L, Hagel B, Black AM, Babul S, Mrazik M, **Marshall DA**, Emery CA. Correction: Reality Check 2: The cost-effectiveness of policy disallowing body checking in non-elite 13- to 14-year old ice hockey players. *IJERPH*, Feb 2024;21(3):269.

Iziduh S, Abenoja A, Theodorlis M, Ahluwalia V, Battistella M, Borkhoff CM, [Hazlewood GS](#), Lofters A, MacKay C, **Marshall DA**, Gagliardi AR. Priority strategies to reduce socio-gendered inequities in access to person-centred osteoarthritis care: Delphi survey. *BMJ Open*, Feb 2024;14(2):e080301.

Marshall DA, Veldwijk J, Janssen EM, Reed SD. Stated-preference survey design and testing in health applications. *The Patient-Patient-Centered Outcomes Research*, Jan 2024; 1-11. <https://link.springer.com/article/10.1007/s40271-023-00671-6>

[Crosland P](#), Ho N, Hossein Hosseini S, Vacher C, Skinner A, Natsky AN, Rosenberg S, Hasudungan R, Huntley S, Song YJC, Lee GY, **Marshall DA**, Occhipinti J-A, Hickie IB. Cost-effectiveness of system-level mental health strategies for young people in the Australian Capital Territory: a dynamic simulation modelling study. *Lancet Psychiatry* 2024; 11(2):123-133. [https://doi.org/10.1016/S2215-0366\(23\)00396-6](https://doi.org/10.1016/S2215-0366(23)00396-6).

Florax AA, Doeleman MJH, de Roock S, van der Linden N, Schatorjé E, Currie G, **Marshall DA**, IJzerman MJ, Yeung RSM, Benseler SM, Vastert SJ, Wulfraat NM, Swart JF, Kip MMA, for UCAN-CAN DU and UCAN CURE consortia, Quantifying hospital-associated costs, and accompanying travel costs and productivity losses, before and after withdrawing tumour necrosis factor-alfa inhibitors in juvenile idiopathic arthritis, *Rheumatology*, Dec 2023;kead688 (<https://doi.org/10.1093/rheumatology/kead688>)

Hartley T, **Marshall DA**, Acker M, Fooks K, Gillespie MK, Price EM, Graham ID, White-Brown A, MacKay L, Macdonald SK, Brady L, Hui AY, Andrews JD, Chowdhury A, Wall E, Soubry E, Ediae GU, Rojas S, Assamad D, Dymont D, Tarnopolsky M, Sawyer SL, Chisholm C, Lemire G, Amburgey K, Lazier J, Mendoza-Londono R, Dowling JJ, Balci TB, Armour CM, Bhola PT, Costain G, Dupuis L, Carter M, Badalato L, Richer J, Boswell-Patterson C, Kannu P, Cordeiro D, Warman-Chardon J, Graham G, Mok Siu V, Cytrynbaum C, Rusnak A, Aul RB, Yoon G, Gonorazky H, McNiven V, Mercimek-Andrews S, Guerin A, Deshwar AR, Marwaha A, Weksberg R, Karp N, Campbell M, Al-Qattan S, Shuen AY, Inbar-Feigenberg M, Cohn R, Szuto A, Inglese C, Poirier M, Chad L, Potter B, Boycott KM, Hayeems R, Brudno M, Bernier F, van Karnebeek C, Dymont D, Kernohan K, Innes M, Lamont R, Parboosingh J, **Marshall DA**, Marshall C, Knoppers B, Lehman A, Mostafavi S. Evaluation of the diagnostic accuracy of exome sequencing and its impact on diagnostic thinking for patients with rare disease in a publicly funded health care system: A prospective cohort study, *Genetics in Medicine*, 2024;26(2):101012, <https://doi.org/10.1016/j.gim.2023.101012>

Marshall DA, Suryaprasash N, Bryan S, McCarron T, MacKean G, Barker K, Lavalley D, Zelinsky S, Santana M, Moayyedi P. Measuring the impact of patient engagement in health research: an exploratory study using multiple survey tools. *Journal of the Canadian Association of Gastroenterology*, Dec 2023;gwad045.

Lalit S, Griffin JD, Pandya BJ, Shah MB, Zhou M, Yang H, Song Y, **Marshall DA**. Patient and physician preferences for acute myeloid leukemia maintenance treatments following hematopoietic stem cell transplantation. *Patient Preference and Adherence*, Dec 2023;17:2805-2819. <https://doi.org/10.2147/PPA.S421871>

Marshall DA, Suryaprasash N, Lavalley DC, Barker KL, MacKean G, Zelinsky S, McCarron TL, Santana MJ, Moayyedi P, Bryan S. Exploring the outcomes of research engagement using the observation method in an online setting, *BMJ Open*, Nov 2023;13(11):e073953 <https://bmjopen.bmj.com/content/13/11/e073953.long>

Saini L, Griffin JD, Pandya BJ, Shah MV, Zhou M, Yang H, Song Y, **Marshall DA**. Patient and Physician Preferences for Acute Myeloid Leukemia Maintenance Treatments Following Hematopoietic Stem Cell Transplantation. *Patient Prefer Adherence*, Nov 2023;17:2805-2819 <https://doi.org/10.2147/PPA.S421871>

Gagliardi AR, Abbaticchio A, Theodorlis M, **Marshall DA**, MacKay C, Borkhoff CM, Hazlewood GS, Battistella M, Lofters A, Ahluwalia V. Multi-level strategies to improve equitable timely person-centred osteoarthritis care for diverse women: qualitative interviews with women and healthcare professionals. *International Journal for Equity in Health*, Oct 2023;22(1):207

D'Silva A, Islam Z, **Marshall DA**, Vallance JK, Nasser Y, Rajagopalan V, MacKean G, Raman M. Experiences of irritable bowel syndrome patients in a virtual yoga program: Qualitative findings from a clinical trial. *Digestive Diseases and Sciences*, Oct 2023;69:169-179

Abuwa C, Abbaticchio A, Theodorlis M, **Marshall DA**, MacKay C, Borkhoff CM, Hazlewood GS, Battistella M, Lofters A, Ahluwalia V, Gagliardi AR. Identifying strategies that support equitable person-centred osteoarthritis care for diverse women: content analysis of guidelines. *BMC Musculoskeletal Disorders*, Sept 2023;24(1):734

Marshall DA, Barber CE, Tagimacruz MA, Cepoiu-Martin Monica, Lopatina E, Robert J, Lupton T, Patel J, Mosher DP. Intended and unintended consequences of strategies to meet performance benchmarks for rheumatologist referrals in a centralized intake system. *Journal of Evaluation in Clinical Practice*, Sept 2023;1-10
<https://doi.org/10.1111/jep.13926>

Marshall DA, Gerber B, Lorenzetti DL, MacDonald KV, Bohach RJ, Currie GR. Are we capturing the socioeconomic burden of rare genetic disease? A scoping review of economic evaluations and cost-of-illness studies. *Pharmacoeconomics*, August 2023;41:1563-1588 <https://doi.org/10.1007/s40273-023-01308-0>

Currie GR, Kennedy BL, Benseler SM, Yeung RSM, Swart JF, Vastert SJ, Wulffraat NM, Kip MMA, MacKean G, **Marshall DA**. Managing juvenile idiopathic arthritis within the context of their life: What we learnt from children and youth living with juvenile idiopathic arthritis and their parents. *Musculoskeletal Care, Open Access*, August 2023;1-13. <https://doi.org/10.1002/msc.1805>

Vik S, Seidel J, Smith C, **Marshall DA**. Breaking the 80: 20 rule in health research using large administrative data sets. *Health Informatics Journal*, July 2023;29(2): 1-13.

Phillips KA, **Marshall DA**, Adler L, Figueroa J, Haeder SF, Hamad R, Hernandez I, Moucheraud C, Nikpay S. Ten health policy challenges for the next 10 years. *Health Affairs Scholar*, July 2023;1(1):1-8.
<https://doi.org/10.1093/haschl/qxad010>

van Til JA, Kip MMA, Schatorjé EJH, Currie G, Twilt M, Benseler SM, Swart JF, Vastert SJ, Wulffraat N, Yeung RSM, Groothuis-Oudshoorn CSM, Warta S, **Marshall DA**, Ijzerman MJ (on behalf of the UCAN CAN-DU, UCAN CURE Consortia). Withdrawing biologics in non-systemic JIA: what matters to pediatric rheumatologists?. *Pediatr Rheumatol*, July 2023;21(1):69. <https://doi.org/10.1186/s12969-023-00845-4>

Fullerton MM, Pateman M, Hasan H, Doucette EJ, Cantarutti S, Koyama A, Weightman AM, Tang T, Coakley A, Currie GR, Fabreau G, Constantinescu C, **Marshall DA**, Hu J. Barriers experienced by families new to Alberta, Canada when accessing routine-childhood vaccinations. *BMC Public Health*, July 2023;23:1333.
<https://doi.org/10.1186/s12889-023-16258-7>

Abenoja A, Theodorlis M, Ahluwalia V, Battistella M, Borkhoff CM, Hazlewood GS, Lofters A, MacKay C, **Marshall DA**, Gagliardi AR. Strategies to Improve Equitable Access to Early Osteoarthritis Diagnosis and Management: An updated Review. *Arthritis Care & Research*, June 2023;1-10

Tagimacruz T, Cepoiu-Martin M, **Marshall DA**. Exploratory analysis using discrete event simulation modelling of the wait times and service costs associated with the maximum wait time guarantee policy applied in a rheumatology central intake clinic. *Health Systems*, June 2023;1-11 <https://doi.org/10.1080/20476965.2023.2219293>

Barber CEH, Lacaille D, Croxford R, Barnabe C, **Marshall DA**, Abrahamowicz M, Xie H, Avina-Zubieta A, Esdaile JM, Hazlewood GS, Faris P, Katz S, MaMullan P, Mosher DP, Widdifield J. Investigating associations between access to rheumatology care, treatment, continuous care, and healthcare utilization and costs among older individuals with rheumatoid arthritis. *The Journal of Rheumatology*, May 2023;50(5):617-624

Currie GR, Groothuis-Oudshoorn C, Twilt M, Kip MMA, IJzerman MJ, Benseler SB, Swart JF, Vastert SJ, Wulffraat NM, Yeung R, **Marshall DA**. What matters most to pediatric rheumatologists in deciding whether to discontinue biologics in a child with juvenile idiopathic arthritis? A best-worst scaling survey. *Clin Rheumatol*, May 2023;42:2173-2180. <https://doi.org/10.1007/s10067-023-06616-6>

Currie GR, Gerber B, Lorenzetti D, MacDonald K, Benseler S, Bernier FP, Boycott KM, Carias KV, Hamelin B, Hayeems RZ, LeBlanc C, Twilt M, van Rooijen G, Wong-Rieger D, Yeung RSM, **Marshall DA**. Developing a Framework of Cost Elements of Socioeconomic Burden of Rare Disease: A Scoping Review. *Pharmacoeconomics*, April 2023;41:803-818. (<https://link.springer.com/article/10.1007/s40273-023-01262-x>)

Cooper SM, Currie G, Kromm S, Twilt M, **Marshall DA**. Evaluating key performance indicators of the process of care in juvenile idiopathic arthritis. *Pediatric Rheumatology*, April 2023;21(37):1-13 (<https://doi.org/10.1186/s12969-023-00818-7>)

Hawker GA, Bohm E, Dunbar MJ, Faris P, Jones CA, Noseworthy T, Ravi B, Woodhouse LJ, **Marshall DA**. Patient appropriateness for total knee arthroplasty and predicted probability of a good outcome. *RMD Open*, April 2023;9(2):e002808. doi: 10.1136/rmdopen-2022-002808

Marshall DA, Trenaman L, MacDonald KV, Johnson JA, Stacey D, Hawker G, Smith C, Durand D, Bansback N. Impact of an online, individualised, patient reported outcome measures based patient decision aid on patient expectations, decisional regret, satisfaction, and health-related quality-of-life for patients considering total knee arthroplasty: Results from a randomised controlled trial. *Journal of Evaluation in Clinical Practice*, April 2023;29(3):513-524.

Connor-Spady BL, **Marshall DA**, Bohm E, Dunbar MJ, Loucks L, Noseworthy T. Patient acceptable symptom state(PASS): thresholds for the EQ-5D-5L and Oxford hip and knee scores for patients with total hip and knee replacement. *Quality of Life Research*, Feb 2023;32(2):519-530.

Kip MMA, de Roock S, Currie G, **Marshall DA**, Grazziotin LR, Twilt M, Yeung RSM, Benseler SM, Vastert SJ, Wulffraat N, Swart JF, IJzerman MJ. Pharmacological treatment patterns in patients with juvenile idiopathic arthritis in the Netherlands: a real-world data analysis. *Rheumatology (Oxford)*, Feb 2023;62(SI2):SI170-SI180.

Mourali M, Benham J, Lang R, Fullerton M, Boucher J, Cornelison K, Oxoby R, Constantinescu C, Tang T, **Marshall DA**, Hu J. Persuasive Messages for Improving Adherence to COVID-19 Prevention Behaviors: Randomized Online Experiment. *JMIR Hum Factors*, Feb 2023;10:e41328

D'Silva A, Vallance JK, Nasser Y, Taylor L, Kothandaraman M, Lazarescu A, **Marshall DA**. Gastroenterologist and patient attitudes toward yoga as a therapy for irritable bowel syndrome: An application of the theory of the theor planned behavior. *Journal of Canadian Gastroenterology*, Feb 2023;6(1):17-25.

Bridges JFP, de Bekker-Grob EW, Hauber AB, Heidenreich S, Janssen E, Bast A, Hanmer J, Danyliv A, Low E, Bouvy JC, **Marshall DA**. A roadmap for increasing the usefulness and impact of patient-preference studies in decision making in health: good practices report of an ISPOR task force. *Value Health*, Feb 2023;26(2):153-162.

Kennedy BL, Currie GR, Kania-Richmond A, Emery CA, MacKean G, **Marshall DA**. Patient beliefs about who and what influences their hip and knee osteoarthritis symptoms and progression. *Musculoskeletal Care*, Sept 2022;20(3):605-615.

Kennedy BL, Currie GR, Kania-Richmond A, Emery CA, MacKean G, **Marshall DA**. Factors That Patients Consider in their Choice of Non-Surgical Management for Hip and Knee Osteoarthritis: Formative Qualitative Research for a Discrete Choice Experiment. *The Patient -- Patient-Centered Outcomes Research*, Sept 2022;15(5):537-550.

Michaels-Igbokwe C, Currie G, Kennedy BL, MacDonald KV, **Marshall DA**. Methods for conducting stated preference research with children and adolescents in health: A scoping review of the application of discrete choice experiments. *The Patient – Patient-Centered Outcomes Research*, Nov 2021;14(6):741-758.

Thomas M, Fraenkel L, Boonen A, Bansback N, Buchbinder R, **Marshall DA**, Proulx L, Voshaar M, Richards P, Richards DP, Hilgsmann M, Guillemain F, Shea B, Tugwell P, Hazlewood G. Patient preferences to value health outcomes in rheumatology clinical trials: Report from the OMERACT special interest group. *Seminars in Arthritis and Rheumatism*. Aug 2021;51(4):919-924.

Malone DC, Ramsey SD, Patrick DL, Johnson FR, Mullins CD, Roberts MS, Willke RJ, **Marshall DA**. Criteria and Process for Initiating and Developing an ISPOR Good Practices Task Force Report. *Value in Health*, April 2020;23(4):409-415.

Hazlewood GS, Pokharel G, Deardon R, Marshall DA, Bombardier C, Tomlinson G, Ma C, Seow CH, Panaccione R, Kaplan G. Patient preferences for maintenance therapy in Crohn's disease: A discrete-choice experiment. *PLoS One*, Jan 2020;15(1): e0227635

Durand C, Maysoon E, **Marshall DA**, Bansback N, Hazlewood GS. Patient preferences for disease-modifying antirheumatic drug treatment in rheumatoid arthritis: A systematic review. *Journal of Rheumatology*, Feb 2020;47(2):176-187.

Bansback N, Trenaman L, MacDonald KV, Hawker G, Johnson JA., Stacey D, **Marshall DA**. An individualized patient-reported outcome measure (PROM) based patient decision aid and surgeon report for patients considering total knee arthroplasty: Protocol for a pragmatic randomized controlled trial. *BMC Musculoskeletal Disorders*, Feb 2019; 20:89

Jansen EM, **Marshall DA**, Hauber AB, Bridges JFP. Improving the quality of discrete-choice experiments in health: How can we assess validity and reliability? *Expert Review of Pharmacoeconomics & Outcomes Research*, Dec 2017; 17(6):531-542.

Crown W, Buyukkaramikli N, Thokala P, Morton A, Sir MY, **Marshall DA**, Tosh J, Padula WV, Ijzerman MJ, Wong PK, Pasupathy KS. Constrained optimization methods in health services research – An introduction: Report 1 of the ISPOR Optimization Methods Emerging Good Practices Task Force. *Value in Health* 2017;20(3):310-19.

Hauber AB, Marcos Gonzales J, Groothuis-Oudshoorn CGM, Prior T, **Marshall DA**, Cunningham C, Ijzerman MJ, Bridges JFP. Statistical methods for the analysis of discrete-choice experiments: A report of the ISPOR Conjoint Analysis Good Research Practices Task Force. *Value in Health*. June 2016;19(4):300-15.

E. Selected Active Research Grants

1. (Role: PI) Enhancing a Community of Practice for the Health System Impact Fellowship Program: Advancing Capacity for Sustainable & Patient-Centred Learning Health Systems across Canada (Supplemental Direct Funding); Funding Agency: Canadian Institute of Health Research (CIHR), Institute of Health Services and Policy Research (IHSPR); Awarded Amount: \$100,000; 2023 – 2025
2. (Role: Co-investigator) Collaborative, participatory co-production of a clinical dashboard for patients with inflammatory arthritis to enhance patient-centred care and shared decision-making; Funding Agency: Canadian Initiative for Outcomes in Rheumatology (CIORA); Awarded Amount: \$116,400; 2023 – 2026
3. (Role: Co-PI of Impact, Value and Knowledge Mobilisation Lead) One Child Every Child (OCEC): A transformational child health research initiative; Funding Agency: Government of Canada, Canada First Research Excellence Fund (CFREF); Awarded Amount: \$1.26M; 2023 – 2030

4. (Role: Co-PI) Effectiveness of an individualized decision aid for total knee arthroplasty implemented in routine clinical practice; Funding Agency: EuroQol; Awarded Amount: \$269,981; 2023 – 2025
5. (Role: PI) Enhancing a community of practice for the Health System Impact Fellowship Program: Advancing capacity for sustainable & patient-centred learning Health Systems across Canada (Suppl/Extension)
Funding Agency: Canadian Institute of Health Research (CIHR), Institute of Health Services and Policy Research (IHSPR);
Awarded Amount: \$350,000; 2022 – 2025
6. (Role: Co-PI) IMAGINE 2.0 (Inflammation, Microbiome, and Alimentation: Gastro-Intestinal and Neuropsychiatric Effects)
SPOR Clinical Disease Network – Knowledge Translation Implementation; Funding Agency: Canadian Institute of Health Research (CIHR); Awarded Amount: \$3.75M; 2022 – 2026
7. (Role: PI) Producing and Arthritis Value-Framework with Economic Evidence – Paving the Way for Rare Childhood Disease (PAVE); Funding Agency: European Joint Programme Rare Disease; Awarded Amount: €1,314,403; 2022 – 2025
8. (Role: PI) Enhancing a community of practice for the Health System Impact Fellowship Program: Advancing capacity for sustainable & patient-centred learning Health Systems across Canada; Funding Agency: Canadian Institute of Health Research (CIHR), Institute of Health Services and Policy Research (IHSPR); Awarded Amount: \$200,000; 2021 – 2023
9. (Role: Co-investigator Economics Lead) TIGeR: Translational Implementation of Genomics for Rare diseases
Funding Agency: Genome Alberta; Awarded Amount: \$2M; 2020 – 2024
10. (Role: Co-investigator Economic Lead) Care4Rare Canada: Harnessing multi-omics to deliver innovative diagnostic care for rare genetic diseases in Canada (C4R-SOLVE); Funding Agency: Ontario Genomics, Genome Canada; Awarded Amount: \$1.86M; 2018 – 2022
11. (Role: Co-investigator Economics Lead) UCAN CAN DU and beyond: Towards a genomic partnership for childhood arthritis
Funding Agency: Canadian Institute of Health Research (CIHR); Awarded Amount: \$5.13M; 2021 – 2024
12. (Role: Co-investigator Economics Lead) UCAN CURE: Precision decisions for childhood arthritis; Funding Agency: Genome Canada and Ontario Genomics; Awarded Amount: \$10M; 2018 – 2024
13. (Role: Co-PI) IMAGINE 1.0 (Inflammation, Microbiome, and Alimentation: Gastro-Intestinal and Neuropsychiatric Effects): the IMAGINE-SPOR chronic disease work; Funding Agency: Canadian Institute of Health Research (CIHR); Awarded Amount: \$12.45M; 2016 – 2025