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Professional experience

- Aug 2023–pres. **Adjunct Lecturer**, *Division of Epidemiology, Dalla Lana School of Public Health*, University of Toronto, Toronto
- 2020–May 2024 **Research Principal**, *Real-World and Advanced Analytics group*, Cytel Inc, Toronto
- 2018–2020 **Research Consultant**, *Lighthouse Outcomes Inc*, Toronto

Education

- 2013–2018 **PhD**, *University of Toronto*, Toronto
- 2008–2012 **Hon BSc**, *University of Toronto*, Toronto

Talks

- [1] E Merinopoulou, Gupta A, A Struebing, B Adamson, and S Duffield. Addressing RWE transportability concerns in health care decision-making. How to do it right? International Conference for Pharmacoepidemiology, August 2024 (Accepted as Workshop).
- [2] M Gomes, W Cheung, and A Gupta. Target trial emulation in practice. ISPOR Atlanta, May 8, 2024 (Workshop).
- [3] A Gupta. Unavoidable bias in epidemiologic studies. GSK Translational Statistics working group, April 5, 2024 (Invited talk).
- [4] E Merinopoulou, A Matthews, S Duffield, and A Gupta. Data transportability in htas: An introduction to transportability analysis for the assessment of external validity in rwe studies. ISPOR short course (Virtual), March 27-28, 2024.
- [5] A Gupta. Bias in observational studies and what to do about it. Pharmaceutical Evaluation and Policy seminar, University of Arkansas, September 15, 2023 (Invited talk).
- [6] A Gupta and A Diop. Assessing the performance of group-based trajectory modelling method to discover patterns of medication adherence. International Conference on Pharmacoepidemiology (ICPE) Annual Conference, Halifax, Nova Scotia, Canada, August 23-27, 2023 (Podium).

- [7] [Thorlund, K](#), [Shi, J](#), A Gupta, and S Duffield. The reality of target trial emulation for medical decision-making and HTA recommendations - Is the gap between academic and HTA applications too wide? International Society for Pharmacoeconomics and Outcomes Research (ISPOR) Annual Conference, Boston, Massachusetts, May 7-10, 2023 (Workshop).
- [8] S Wilkinson, A Gupta, and [Arora, P](#). Using probabilistic quantitative bias analysis (QBA) to account for unmeasured confounders when estimating treatment effects in real-world data. Virtual ISPOR, May 17-20, 2021 (Workshop).
- [9] [Cheung, WY](#), RN Walton, [Mitsakakis, N](#), and A Gupta. Transparent machine learning and decision-making in HEOR. Virtual ISPOR, May 17-20, 2020 (Workshop).
- [10] A Gupta. Bayesian networks as an emerging tool for disease risk estimation and clinical decision-making: A real-world example in coronary artery disease. CADTH Symposium, Edmonton, Canada, April 14-16, 2019 (Workshop).

Publications

- [1] Awa Diop, Alind Gupta, Sabrina Mueller, Louis Dron, Ofir Harari, Heather Berringer, Vinusha Kalatharan, Jay JH Park, Miceline Mésidor, and Denis Talbot. Assessing the performance of group-based trajectory modeling method to discover different patterns of medication adherence. *Pharmaceutical Statistics*, 2024.
- [2] Kristian Thorlund, Stephen Duffield, Sanjay Papat, Sreeram Ramagopalan, Alind Gupta, Grace Hsu, Paul Arora, and Vivek Subbiah. Quantitative bias analysis for external control arms using real-world data in clinical trials: a primer for clinical researchers. *Journal of Comparative Effectiveness Research*, (0):e230147, 2023.
- [3] Frank Griesinger, Sreeram Ramagopalan, Winson Y Cheung, Thomas Wilke, Sabrina Mueller, Alind Gupta, Dylan E O’Sullivan, Paul Arora, Darren R Brenner, Carolin Froelich, et al. Association between treatment and improvements in overall survival of patients with advanced/metastatic non-small cell lung cancer since 2011: A study in the united states, canada, and germany using retrospective real-world databases. *Cancer*, 2023.
- [4] DJ Boyne, DR Brenner, A Gupta, E Mackay, P Arora, R Wasiak, WY Cheung, and MA Hernán. Head-to-head comparison of folfirinnox versus gemcitabine plus nab-paclitaxel in advanced pancreatic cancer: a target trial emulation using real-world data. *Annals of Epidemiology*, 78:28–34, 2023.
- [5] L Dron, V Kalatharan, A Gupta, J Häggström, N Zariffa, AD Morris, P Arora, and J Park. Data capture and sharing in the COVID-19 pandemic: a cause for concern. *The Lancet Digital Health*, 4(10):e748–e756, 2022.
- [6] S Papat, SV Liu, N Scheuer, A Gupta, GG Hsu, SV Ramagopalan, F Griesinger, and V Subbiah. Association between smoking history and overall survival in

patients receiving pembrolizumab for first-line treatment of advanced non-small cell lung cancer. *JAMA Network Open*, 5(5):e2214046–e2214046, 2022.

- [7] S Popat, SV Liu, N Scheuer, GG Hsu, A Lockhart, SV Ramagopalan, F Griesinger, and V Subbiah. Addressing challenges with real-world synthetic control arms to demonstrate the comparative effectiveness of pralsetinib in non-small cell lung cancer. *Nature Communications*, 13(1):3500, 2022. (Unattributed authorship but I performed analyses for and output figures 2 and 3).
- [8] S Ramagopalan, A Gupta, P Arora, K Thorlund, J Ray, and V Subbiah. Comparative effectiveness of atezolizumab, nivolumab, and docetaxel in patients with previously treated non-small cell lung cancer. *JAMA Network Open*, 4(11):e2134299–e2134299, 2021.
- [9] S Wilkinson, A Gupta, N Scheuer, E Mackay, P Arora, K Thorlund, R Wasiak, J Ray, S Ramagopalan, and V Subbiah. Assessment of alectinib vs ceritinib in ALK-positive non-small cell lung cancer in phase 2 trials and in real-world data. *JAMA Network Open*, 4(10):e2126306–e2126306, 2021.
 - This paper was showcased as a case study for quantitative bias analysis in real-world evidence framework from National Institute for Health and Care Excellence (NICE): [here](#). Accompanying invited commentary by Julian C. Hong: *JAMA Network Open*. 2021;4(10):e2128045.
- [10] S Nsanzimana, A Gupta, JP Uwizihwe, J Häggström, L Dron, P Arora, and JJH Park. The need for a practical approach to evaluate the effectiveness of COVID-19 vaccines for low-and middle-income countries. *The American Journal of Tropical Medicine and Hygiene*, 105(3):561, 2021.
- [11] A Badawi, CJ Liu, AA Rihem, and A Gupta. Artificial neural network to predict the effect of obesity on the risk of tuberculosis infection. *Journal of Public Health Research*, 10(1):jphr–2021, 2021.
- [12] A Gupta, P Arora, D Brenner, J Vanderpuye-Orgle, DJ Boyne, M Edmondson-Jones, E Parkhomenko, W Stevens, S Dudani, DYC Heng, et al. Risk prediction using Bayesian networks: An immunotherapy case study in patients with metastatic renal cell carcinoma. *JCO Clinical Cancer Informatics*, 5:326–337, 2021.
- [13] A Dillman, MJ Zoratti, JJH Park, G Hsu, L Dron, G Smith, O Harari, CR Rayner, NE Zannat, A Gupta, et al. The landscape of emerging randomized clinical trial evidence for COVID-19 disease stages: a systematic review of global trial registries. *Infection and Drug Resistance*, pages 4577–4587, 2020.
- [14] A Badawi, G Di Giuseppe, A Gupta, A Poirier, and P Arora. Bayesian network modelling study to identify factors influencing the risk of cardiovascular disease in Canadian adults with hepatitis C virus infection. *BMJ Open*, 10(5):e035867, 2020.

- [15] A Gupta, JJ Slater, DJ Boyne, N Mitsakakis, A Béliveau, MJ Druzdzel, DR Brenner, S Hussain, and P Arora. Probabilistic graphical modeling for estimating risk of coronary artery disease: applications of a flexible machine-learning method. *Medical Decision Making*, 39(8):1032–1044, 2019.
- [16] P Arora, D Boyne, JJ Slater, A Gupta, DR Brenner, and MJ Druzdzel. Bayesian networks for risk prediction using real-world data: a tool for precision medicine. *Value in Health*, 22(4):439–445, 2019.

Conference proceedings

- [1] H Ruan, A Springford, A Gupta, and E Mackay. MSR102 Variance-bias trade-off in covariate adjustment in the context of synthetic control methods. volume 25, page S369. Elsevier, 2022.
- [2] S Kent, A Gupta, S Duffield, S Popat, J Ray, A Lockhart, M Hernán, and S Ramagopalan. MSR125 Bias adjusting for unmeasured confounders in synthetic control analysis (SCA) estimates of immunotherapy effectiveness in advanced non-small cell lung cancer (aNSCLC): An output from the Q-BASEL study. volume 25, page S374. Elsevier, 2022.
- Part of research collaboration with National Institute for Healthcare Excellence (NICE) and other stakeholders.
- [3] A Gupta, S Ramagopalan, D Boyne, DR Brenner, WY Cheung, P Arora, and R Wasiak. POSC299 Transportability analysis: A principled method for transporting treatment effects observed in one real-world dataset to another. volume 25, page S207. Elsevier, 2022.
- [4] S Wilkinson, A Gupta, E Mackay, P Arora, K Thorlund, R Wasiak, J Ray, and S Ramagopalan. OP208 Did HTAs make the wrong call? Quantitative bias analysis: Alectinib versus ceritinib in non-small cell lung cancer. volume 37, pages 6–6. Cambridge University Press, 2021.
- [5] V Subbiah, A Gupta, J Ray, P Arora, K Thorlund, and S Ramagopalan. 1316P Comparative effectiveness of atezolizumab (Atz) versus docetaxel (Dtx) or nivolumab (Niv) in previously treated (pt) patients with advanced non-small cell lung cancer (aNSCLC): A US real-world (RW) study. volume 32, pages S1012–S1013. Elsevier, 2021.
- [6] S Wilkinson, A Gupta, N Scheuer, E Mackay, P Arora, K Thorlund, R Wasiak, J Ray, and S Ramagopalan. RW3 quantitative bias analysis (QBA) for comparative effectiveness of alectinib versus ceritinib in non-small cell lung cancer (NSCLC). volume 24, page S239. Elsevier, 2021.
- [7] DJ Boyne, D Brenner, A Gupta, E Mackay, P Arora, R Wasiak, WY Cheung, and M Hernan. Head-to-head comparison of first-line folfinox versus gemcitabine plus nabpaclitaxel (GN) in advanced pancreatic cancer (APC): A target trial emulation using Canadian real-world data. Wolters Kluwer Health, 2021.

- [8] A Gupta, P Arora, D Brenner, M Edmonson-Jones, E Parkhomenko, W Stevens, S Wagner, J Borrill, and E Wu. Application of a machine learning model to predict survival outcomes for patients with advanced renal cell carcinoma (aRCC) treated with nivolumab. In *41st Annual Meeting of the Society for Medical Decision Making*. SMDM, 2019.
- [9] A Gupta, J Slater, N Mitsakakis, DJ Boyne, MJ Druzdzal, DR Brenner, and P Arora. PCV99 Bayesian networks as an emerging tool for disease risk estimation and clinical decision-making: A real-world example in coronary artery disease. volume 22, page S136. Elsevier, 2019.

Languages

English	Native or bilingual proficiency
Hindi	Native or bilingual proficiency
Japanese	Limited working proficiency (approx. JLPT N2)
Spanish	Basic proficiency

Computer skills

Languages	Python, R	<i>(Past) Haskell, C, C++11, Julia</i>
Technologies	Git, LaTeX, Microsoft Office Suite	<i>(Past) MySQL, Stan, Bugs, Docker</i>

Miscellaneous

- 2021 Invited judge for UofT AI ProjectX
- 2021 Interviewed for MedPage Today on machine learning for cancer immunotherapy ([link](#))